

**WAR WINNING:
PARADIGMS AND VISIONS FOR HIGH-END WARFARE**

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INTRODUCTION

In February 2000, the NDU QDR '01 Working Group concluded an in-depth background study of the future security environment. In comparing and analyzing over thirty significant future estimates, forecasts, and scenarios, there became apparent a general consensus among prominent civil-military thought on the character of the future. It is postulated that during the next 25 years, the United States will be challenged by a regional competitor or rogue state who will use anti-access and area denial strategies. US military operations overseas will be conducted in urban terrain and under increasingly "chaotic" conditions, while back in the continental United States we can expect attempts to attack our homeland by asymmetric means. Advanced military technology will become more diffuse, allowing significant tactical intelligence to become more commercially available. Large-scale land combat is likely to include the use of weapons of mass destruction, and control of the air and seas will be challenged. Space will become increasingly more vulnerable and not proprietary to the United States, while information warfare will rise to become a significant tool of war, shattering traditional definitions of targets and effects. As we prepare for the future, we foresee the need to hedge against an eventual military near-peer competitor, as well as against potential alliances by regional competitors. It is also possible a collapse of a key ally or regional support could occur, bringing about our inevitable involvement.

As we progress towards this future, the very nature of American warfare is changing. Where once the U.S. military was forward based, it is now primarily CONUS based and expeditionary. Speed in getting to the fight is paramount. Rapid global attack and mobility have become the norm, where the projection of military power and effects often supercedes the deployment of massed, military power. Long range standoff attack and precision weapons now focus on rapid, nodal targeting for effects in place of "slug-fest" attrition. Coalition and Alliance warfare will almost always be the case, requiring U. S. forces to have higher levels of interoperability as well as consensus with allied partners to ensure future success.

In light of this future, *War Winning* looks at how the U. S. military needs to change its perspectives on high-intensity/high-end warfighting commonly referred to as major theater war (MTW). It focuses on that part of the military operational spectrum where significant conventional forces are committed in violent warfare--such as large, force on force conventional confrontations. Yet since the Gulf War, history continues to repeatedly demonstrate that the conduct of modern conventional warfare is not solely constrained to classic, canonical MTW constructs alone. In

fact, future MTWs may not be confined to a Southwest Asia (Iraq) or Northeast Asia (North Korea) scenario.

To understand how to fight and win future wars, this work first reviews the current MTW paradigm, with respect to the history of warfare, current warplans, and joint doctrine. It then summarizes and compares future Joint and Service Visions, in an attempt to gain insight on where the military views its future path. Given that foundation, a new definition for major theater war is proposed, along with an analysis of significant influences on its future character—specifically coalitions and alliances, access, and American casualty tolerance. Using the new, broader definition for an MTW, the work frames three possible MTW archetypal scenarios for consideration. Finally, it concludes with outlining concepts and critical enabling capabilities to fight and win the future high-intensity/high-end warfight.

It is hoped this work serves as a source for the Joint Staff, Warfighting CINCs, Services, and new Administration in their efforts during the upcoming Quadrennial Defense Review—which is aimed at determining how the United States should structure its military forces for the future. Perhaps this work can serve as a tool to assist in the process of making the tough strategy and force structure decisions. Regardless, no matter what choices are made towards reshaping the military, the enduring requirement for synergistic, complimentary, and most importantly appropriate applications of aerospace, land, and sea power will always remain...to win wars.

War Winning!

CHAPTER 1

THE CURRENT MTW PARADIGM

*“Know the enemy and yourself;
in a hundred battles you will never be in peril”*

Sun Tzu

Before looking at how the U.S military should fight and win future wars, we must first understand the current major theater war (MTW) paradigm, and how it permeates what we think about war today. The current paradigm has historically evolved to its present MTW definition, and now frames the way our warplans, analyses, and joint doctrine prepare us for war. However, these plans and analyses are not perfect, and presently subject to debate and criticism as warfare in the 21st Century appears destined for significant change. There is a justifiable need for a new way to describe high-intensity/high-end war.

A BRIEF HISTORY LESSON

Warfare has undergone significant change in the past three hundred years. In the 18th Century, warfighting was conducted in limited wars, with limited means, for limited ends. It was generally conducted off in distant lands, separated from the citizens of the nations that clashed. The agricultural age of the 19th Century brought on the Era of Empires. Land-centric, attrition warfare fought with the objective of total political conquest and territorial domination. Conscript warriors in mass armies fought across Europe in “serried ranks, carrying rifles and under the covering of artillery barrages.”¹ Rifled weapons, horse cavalry, infantry, ships, and railways were key instruments of warfare. Generally political resolution occurred after bloody, attrition based mass engagements.

The 20th Century ushered in the Nation State Era of Ideological Conflict, which combined extreme nationalism and globalized industrialization. Nation vs. nation conflicts were all the more lethal, with military goals to totally defeat hostile forces massed at one’s borders. Warfare maintained a predictable, people intensive, land-centric focus, yet now the territory at stake was a much larger piece of the world. High casualties and collateral damage were acceptable costs. During WWI, axis and allied armies massed on the continent of Europe and clashed for years in unyielding trench warfare. During WWII, not only Europe, but also the entire Pacific region lay in the crucible of an axis vs. allied struggle. Ultimately, the Cold War ensued between the United States and the Soviet Union, the most significant ideological conflict in the world’s history. Traditionally, the prevailing models of

¹ Cohen, Eliot A., “War: At Arms”, National Review, January 24, 2000

warfare have been set - in anticipation if not in reality - between armed forces of the world's most important states seeking to eliminate the other in a decisive encounter.² Although significantly waning, these forms of warfare—"the mass-army" ways of war--still persist in some parts of the world.³

The end of the 20th Century and the beginning of the new millenium presented an era of radical change. Theorists argue technology has become a dominant driver in the "RMA high-tech" war.⁴ Others state that the nature of modern warfare has not changed with the advent of revolutions in technology—only that it has been sped up. Still others emphasize that the human element of warfare, to include its "fog and friction," will always endure.⁵ Yet more often in the later part of the 20th Century, the spectrum of conflict did not involve "high-end" warfighting. Other than DESERT STORM and the employment of aerospace power in Kosovo, warfighting has been at a level below that of the classic "high-end" major theater war (MTW) capability construct. More than 50 small-scale contingencies dominate the nine years since DESERT STORM.⁶

Regarding the near future, there is general consensus that there will be no equivalent peer competitor to threaten the United States militarily in conventional or nuclear forces. So, inevitably, the requirement to maintain large conventional forces is often questioned. Yet, there are conventional and nuclear threats that still need to be kept in check—it would be very unwise to do away with our SIOP. War itself is hardly obsolete. There are now more states than ever, that as a result of the arms trade, have been able to acquire significant military capabilities, which have spread to sub-state groups - secessionist movements, religious organizations, criminal gangs, disaffected political parties, and cultish terrorists. So while it may not be necessary for the major powers to worry too much about how they would cope with each other in battle, it is sensible for them to focus on how they should deal with weaker powers fighting in an unorthodox way.⁷ The control of rogue states now dominates the world stage, as "WMD wars" and guerrilla/terrorist "termite wars" round out new and challenging aspects of 20th century warfare.⁸

It appears we have come full circle, where the 21st Century reflects back to an 18th Century environment

² Freedman, Lawrence, "The Changing Forms of Military Conflict", *Survival*, Winter 1998/1998

³ Cohen, Eliot A., "War: At Arms", *National Review*, January 24, 2000

⁴ Ibid

⁵ Scales, Robert H, Maj Gen, USA, "Future Warfare", May 1999 and Watts, Barry D., "Clausewitzian Friction and Future War" McNair Paper #52, Oct 1996

⁶ Cohen, William, SecDef Report to Congress, US Military Involvement in Major SSCs Since the Persian Gulf War, March 1999

⁷ Freedman, Lawrence, "The Changing Form of Military Conflict", *Survival*, Winter, 1998/1999

⁸ Cohen, Eliot A., "War: At Arms", *National Review*, January 24, 2000

where a premium is placed on limited warfare with limited means and ends. Forces do not mass and marching off to conquer and dominate foreign lands, or put down maniacal tyrants determined to conquer the world. War no longer follows the “traditional model confined to set-piece encounters culminating in battlefield victory.”⁹ Instead, RMA high-tech wars, WMD wars, termite wars, and waning mass-army battles now identify warfare as it will persist in the future.¹⁰

THE CLASSIC TWO MTW FOCUS

As warfare appears destined for change, it follows we should similarly adjust our current high-end warfare paradigm. However, the ubiquitous term “major theater war” hampers that ability. MTW traces its roots back to 1993 during the Bottom Up Review (BUR) when then Secretary of Defense Les Aspin first introduced the term “major regional contingency” (MRC). An MRC was near the high-end of conflict (short of nuclear war), and used the Gulf War and a war in Korea as basic “yardsticks”. The MRC capability was specifically defined in the light of supporting two scenarios: a major conventional conflict on the Korean peninsula, and a major conventional conflict in South West Asia. The “stake in the ground” reference for the U. S. Military was that it should have the force structure capability to successfully fight and win both these MRCs nearly simultaneously. The resulting force structure born out of this 2 MRC capability directive was 20 Fighter Wing Equivalents (FWEs), 10 Active Army Divisions, and 12 Carrier Battle Groups. However, doubts remained at high DoD levels on whether the U.S. military could handle two MRCs in close succession.¹¹

With the release of QDR '97, the MRC term evolved to that of the MTW—yet it remained linked to a force capability for the two regions of expected conflict (Iraq and North Korea) and the U.S ability to defeat aggression in both of these specific theaters. QDR '97 (and subsequently the 1998 National Military Strategy {NMS '98}) further emphasized the particularly challenging requirement associated with fighting and winning in “overlapping” timeframes.¹² The U.S. had to be able to rapidly defeat initial enemy advances short of their objectives in two theaters in close succession, one followed almost immediately by another.¹³ High-end warfare, as the US Defense department seemed to view it, was an MTW. Generic use of the term became ever more popular, where large scale

⁹ Freedman, Lawrence, “The Changing Form of Military Conflict”, *Survival*, Winter, 1998/1999

¹⁰ Cohen, Eliot A., “War: At Arms”, *National Review*, January 24, 2000

¹¹ Correll, John, Editor “Back to Win-Hold-Win”, *Air Force Magazine*, Oct 99, page 2

¹² Report of the Quadrennial Defense Review, 1997

¹³ Report of the Quadrennial Defense Review, 1997 and National Military Strategy, 1998

war was measured in terms of an MTW. However, this opened up critical questions--which MTW is one referring to when they use the term MTW? Are not the force structure requirements different for Iraq vs. North Korea? More importantly, could an MTW occur elsewhere besides Iraq and North Korea? Would these new MTWs equal each other in terms of force structure? Despite these unanswered questions, the two MTW capability construct became the primary DoD force-sizing standard to fight two specific large force conventional wars. Any other missions, such as small-scale contingencies, and peacekeeping operations, were subsumed as lesser included cases that could be accomplished with the existing MTW force structure. Warplan guidance continued to focus on building a force structure that had the capability to fight and win the two specific MTW conflicts.

WARPLANS WITH MTW FOCUS

The handful of current theater warplans (OPLANS) formally represent and further entrench the canonical two MTW focus, emphasizing overlapping scenarios, as well as varying the order of sequence. Framed by classic perspectives, these warplans assume an opposing land force in Southwest Asia or Northeast Asia will be deterred and defeated by a predictable, sequential application of U.S. military joint force. First, the US and coalition forces will halt the invading force with available, prepositioned combat power in the region (Halt Phase) plus long range attack assets. Then, as full scale deployment begins, combat power is built up in the region while available forces continue to attack and arrest enemy forces (Build Up and Pound Phase), albeit at a reduced rate. Finally, when enough combat power has been deployed, the theater commander mounts a decisive counteroffensive (Countering Phase). All the while, forces continue to deploy at various times in the CONPLAN / Time Phased Force Deployment Document (TPFDD), as well as equipment and supplies to sustain the combat action. This legacy construct treats each of these sequential phases with equal urgency, and assumes there will always be the need for a Countering Phase, conducted by joint forces in support of a land counteroffensive often three to four months after initial hostilities begin.

These warplans do not exist without criticism. In general, theater warplans focus on the counteroffensive as the decisive turning point for the conflict. However, some schools of thought explain that the warplans do not recognize that a timely and decisive full engagement of an advancing enemy force may be a culminating point. Others say the halt phase just may deter an enemy from further prosecution of their objectives. Still others recognize the fleeting nature of future conflicts, where speed will be of the essence, thus insisting the lengthy build up phase must be shortened in order to mount a critical counter offensive. For example, in the Summer of '96, the Chief of

Staff of the USAF, Gen Ronald Fogleman, became the first Service Chief to “non-concur” with a CONPLAN (CINCENT’s plan for the defense of Kuwait and Saudi Arabia) on the basis of it’s fundamental strategy. Non-concurrence stemmed from his belief that the plan’s inappropriate application of airpower, resulting in the potential for unacceptable casualties, loss of territory and resources, and excessive promulgation of the conflict.¹⁴

These warplans are often criticized for containing assumptions that although justified by seemingly accurate attrition based modeling, may not remain true in the light of a rapidly changing future environment and increasingly capable adversary. For example, warplans assume aerospace superiority will be swiftly gained, to include supremacy over friendly operations to ensure freedom from attack. This ongoing belief fundamentally permeates our military analysis because historically, we do so well defending our skies. Aside from the successful Iraqi F-1 fighter Exocet missile attack on the U.S.S. *Stark* on 17 May 1987—albeit in peacetime in the absence of a robust air defense structure—the last time any enemy fighter successfully attacked U.S. forces on the surface was during the Korean War. However, future engagements may more severely contest our control of the air. As another example, warplans also generally rely on the freedom from enemy missile attack at deployed bases and ports, in addition to seemingly secure air points of departure (APODs) and sea points of departure (SPODs) in CONUS. Although there is no assumption that APODs and SPODs will always be sanctuaries, it is generally assumed the existing in-country bases and ports will always remain available for use. However, denied access due to the WMD threat is a becoming an increasingly significant consideration for warplan development.

Warplan Analysis and Studies—Two Examples

Many principle assumptions in these current MTW warplans have their foundations based in analysis and studies that are criticized in that they do not take into account rapidly evolving military force capabilities and limitations.

DAWMS and TACWAR

One such analysis is the Pentagon’s 1996 Deep Attack Weapons Mix Study (DAWMS) which used a computer analysis and simulation model named TACWAR. During DAWMS, TACWAR executed a notional scenario that postulated 14 days to halt and gain air superiority over an enemy armored force advance with approximately 3,000 sorties per day. However, this was intentionally cut in half during the Build Up and Pound

¹⁴ Riggins, J, Lt Col USAF and Snodgrass, D, Lt Col USAF, “Halting the Myths: Understanding and Applying a Joint “Halt-Phase” Concept”, National War College Paper, 3 May 99. Also published in *Parameters*, Autumn ‘99

phase, based on the intent to preserve precision guided munitions (PGMs) until all troops were in theater, 70 days later. Consequently, attrition of enemy forces fell below those experienced in the Halt Phase. Strike sorties (and use of PGMs) returned to their previous level of 3,000 per day during the Counter-Offensive, 84 days after initiation of hostilities, and enemy losses then returned at an increased level. Critics questioned the rationale for limiting the magnitude of the air attacks during the buildup phase, requiring U.S. land forces to “hold their own” and hunker down till the counter offensive began—essentially handing the strategic initiative to the adversary. It appeared the reduced destruction of the enemy was due to an arbitrary restriction based on the presumed lack of availability of air power resources (aircraft and PGMs), and thereby “hoarding” of assets until the counter-offensive. Proponents argued that if the U.S. military had procured sufficient aircraft and PGMs, there would be no reason to cut back on sorties, especially since it was assumed air superiority had been achieved and there was freedom to attack. It seemed logical that if sufficient ordnance was available, there would be no reason to stop the effects of relentless precision attacks against an armored land force (as well as the strategic targets) that could coerce the enemy leadership into acquiescence. Other TACWAR modeling deficiencies were also brought to light, emphasizing that weaknesses in joint combat modeling do little to help analysts accurately develop force structures for future wars.¹⁵

To be meaningful, models must adequately represent the new joint force capabilities now part of the U.S. arsenal.¹⁶ DAWMS and the TACWAR tool show that if we continue to assess successful force application in an MTW with an analysis tool that portrays inaccurate “older” capabilities, then more than likely the answer will reveal an inability to successfully combat an adversary with out a high degree of risk. However, if the analysis yardstick is updated, and accurate parameters are used to measure force application, then it should show correspondingly accurate joint force performance. Improvement in modeling programs will bring much more accurate analysis of actual military capabilities in any given scenario. Unfortunately, progress has been slow. JWARS, a modeling program with promising potential, will not be fully validated and available for use during QDR ‘01. As such, DoD analytical capability may be severely hamstrung.

¹⁵ Then USAF/AXO Maj Gen Charles Link and Officers of the HQ USAF DAWMS division expressed concern over the lack of accurate airpower modeling in TACWAR. For example, adverse weather effects were double real world experience and aircraft could not return to land bases with weapons after weather aborts. The model required 16 sorties to kill a single North Korean armored personnel carrier, more than it took multiple F-4s in Vietnam, a single A-10 in DESERT STORM, or an F-16 in ALLIED FORCE. Critics sight that other significant inaccuracies still prevail in the TACWAR model today, claiming it does not represent historical precedence.

¹⁶ Haffa, Robert P. “Planning U.S. Forces to Fight Two Wars: Right Number, Wrong Forces”, Strategic Review, Winter 99

JCS Mobility Requirements Study 2005 (MRS-05)

The expected results of the ongoing MRS-05 study have the potential to further entrench theater warplans with the paradigm of a canonical, sequential 2 MTW scenario by focusing on the deployment of significant, heavy land forces to execute a counteroffensive several months after initiation of hostilities. Initiated to fulfill DPG tasking, it uses three postures of engagement (baseline, moderate, and challenging) to focus on two main data sets: #1 - an MTW initiating in the East and then an air bridge swing to cover an MTW in the West, and #2, the reverse West to East. It incorporates heavy lift requirements for classic MTW and forces using a robust fleet of USAF C-5 Galaxy aircraft operating at a mission capable (MC) rates (similar to in service rates) well above what the aircraft are currently reporting. Demands call for at least a 75% MC rate, yet the current fleet's rate hovers well below at 61%.¹⁷ Military planners also assume 135 C-17 airlifters, yet the USAF currently flies 52.

MRS-05 has raised many concerns. CSAF Gen Ryan, who stated "I don't think we can afford to have a two MTW airlift force. That would drive the numbers completely out of the reality."¹⁸ However, he did consider the USAF being able to support airlift to prosecute two MTWs as long as the conflicts were 90 days apart.¹⁹ Gen Charles Robertson, CINC U. S. Transportation Command, explained that the command "...could meet the...mobility requirements for two (MTWs) with medium to high risk."²⁰ Risk, as he meant it, was not necessarily whether the U.S. would lose the war, but whether the U. S. would meet the mobility objectives.

Other concerns over the plan exist. For example, Air Force officials state the Army requirements have reportedly grown 40% to support the classic "counterattack" scenario. Army officials disagree on the exact figure, but do agree the need has grown.²¹ Likewise, concern over the Navy's ability to support the plan is based on 19 medium-speed Roll-On/Roll-Off (RO/RO) cargo-ferrying ships (the Navy currently has only 10, expecting to have its full compliment of 19 in 2002). However, the earliest sealift is not planned to arrive until in theater until three weeks after commencement of hostilities.

Overall, MRS-05 has been plagued by extensive criticism that it is far too optimistic. It assumes a high degree of certainty in the amounts of forces deploying from given locations to specific given areas. Yet there is

¹⁷ "Overloaded", Air Force Times, 30 Aug 99

¹⁸ Ryan, Michael, Gen, CSAF, "Ryan on Fighters, Balkan War, EAF, and Retention", Air Force Magazine, Sep 99

¹⁹ Ibid

²⁰ Robertson, C., Gen USAF, CINCTRANS, as quoted in "Too Heavy", Army Times, 6 Sep 99

²¹ "Overloaded", Air Force Times, 30 Aug 99

considerable *uncertainty* as to where forces will deploy to in the future, as well as reasonable uncertainty as to their point of origin due to our extensive engaged posture overseas. Originally expected to be completed in Dec '99, MRS-05 was recently completed only as a partial, interim report. Due date for a complete final report has been extended for another year to fully study and complete more effective analysis. Ongoing work in MRS-05 will seek to better assess enemy use of WMD at APODs and SPODs, as well as use updated airlift mission capable rates. As such, an improved study will augment theater warplans with an accurate analysis of all critical variables.

DOCTRINE FOR JOINT OPERATIONS, JT PUB 3-0

The most formal written basis for our current warfare paradigms lies in Joint Doctrine, which by definition, governs “the joint activities and performance of the Armed Forces of the United States in joint operations”²² and as such the publications are “authoritative”²³, codifying the American way of modern warfare. The keystone doctrine for Joint Operations in Joint Publication 3-0, 1 Feb 95 (under revision begun in Oct 98). It sets forth the fundamentals of joint operations and the parameters for planning and executing those operations in war.

The joint publication compliments the classic 2 MTW paradigm with emphasis the establishment of land and naval force areas of operations (AOs) for land, amphibious, and naval commanders. This dovetails nicely with the Iraq or North Korea scenarios. It supports the view of combined arms warfare following a predictable plan of AirLand battle, devised in the late 70's, where the offensive force is surface warfare. Phased buildup of land forces from a lodgment phase eventually evolves into a counterattack of massed effects of ground and air maneuver/interdiction.

Critics explain that Jt Pub 3-0 does not reflect the full joint force capabilities in shaping military operations, nor does it give joint force commanders the full range of guidelines or “Sliding Balance” for conducting expeditionary operations.²⁴ It is referred to as inherently land centric, lacking sufficient discussion on other means of operational art demonstrated by and within the capability of U.S. military forces. During the shaping, controlling, engagement, and termination of a joint operation, Jt Pub 3-0 places a majority of the balance on the land component commander. However, critics argue that proven operational art has been different. Joint Force commanders have always employed various components at differently levels based on the operation. JUST CAUSE and Somalia, '93

²² Jt Publication 3-0, 1 Feb 95, Preface, page i

²³ Ibid

²⁴ Grant, Rebecca, Dr, Concepts on The Sliding Balance, with historical examples dating back through WWII, are further described in “Aerospace Power and Joint Doctrine, The Way Ahead” IRIS Briefing, Dec 98

was more classic in terms of land component operations shouldering much of the shaping, controlling, engagement, and termination responsibilities. However, DESERT STORM, DELIBERATE FORCE, DESERT FOX, and ALLIED FORCE emphasized more aerospace component operations. The re-write of Jt Pub 3-0 will attempt to more properly address these issues, to include types of operations, force sequencing, to create a sliding balance between air and land force components.²⁵

THE NEED TO RETHINK HIGH-END WAR

All too often, military forces have been criticized for relaxing on their laurels after combat victory in war, convinced that what worked before will work again. It is prudent to learn the lessons of war, yet more wise to guard against preparing to fight the *last* war. When military organizations prepare to fight the *next* war as an "improved" version of the last, the approach may still be ill-suited if substantial, if not radical, changes in the geopolitical and military-technological operating environments exist.²⁶ Nations must be careful not to laminate outdated concepts on current issues and problems. They must take extra care such concepts are not inadvertently repeated in warplans, analyses, or doctrine. One example is the failure of the French Maginot line, built on the doctrinal construct of an impenetrable line of defenses no force could permeate—at least no highly mobile force. At the outset of WWII, German Panzer forces simply maneuvered around the heavy defenses, rendering them useless. Much the same could be said about USAF forces in the late 1960's, who in early days of the Vietnam war had fighter and bomber crews doctrinally trained for long range nuclear strike rather than tactical maneuvering and attack--and hence paid the ultimate price in lost of aircraft and crews. US forces today face the same dilemma, how to learn from the past yet adapt for future, albeit vastly different warfare. The forces employed in DESERT STORM had been optimized for a clash with the Soviet Union across Eastern Europe. Fortunately, the Iraqi forces operated and fought much like the Soviets in the way we had planned and trained for. Yet the U.S. victory still stemmed from a warplan which allowed an huge buildup of forces prior to commencement of hostilities. I would submit that our next adversary has closely watched and learned valuable lessons. They may not wait for us to fulfill our warplan of Halt-Build up-Counterattack, nor fit into the assumptions of our studies, nor yield to a doctrine of land component primacy. They may not fight the last war, conforming to our old paradigm of war.

The classic 2 MTW paradigm, born out of the BUR, has dominated our warfare thought for the past decade.

²⁵ Grant, Rebecca, Dr, "Aerospace Power and Joint Doctrine, The Way Ahead" IRIS Briefing, Dec 98

²⁶ Krepenivich, Andrew F., "The Conflict Environment of 2016: A Scenario-Based Approach", CSBA, Oct 1996

As such, extensive warplans, analysis, and doctrine have “covered the waterfront” in regard to only two specific scenarios, Iraq and Kuwait. However, the world has changed, and no longer can we fit every possible high-end warfighting scenario into the canonical MTW box. There are other possible scenarios that don’t fit the mold. For example, what of a “Distant Straits” scenario, where primarily air and naval forces are required to halt minimal warning, cross-strait air, amphibious, and missile attack? What of the collapse of a key nation-state, where US land forces are deployed to face no classic armored land force, but rather a leftist guerrilla militia within territorial boundaries? Clearly, there are other scenarios we must consider.

As such, our warplans must reflect that assessment, as must our modeling and analysis. Accurate tools that are adaptable beyond traditional warfighting concepts will serve the greater good to develop well assessed plans, as well as the complimentary force structure and capabilities required. Add to that updated doctrine to guide joint forces, and we will be well prepared for the future wars we expect to fight.

CHAPTER 2

JOINT AND SERVICE WARFIGHTING VISIONS

*"It is not so much the mode of formation
as the proper combined use of the different arms
which will ensure victory"*

*Lt Gen Antoine-Henri
Baron de Jomini*

Having looked at the current MTW paradigm, let's turn to future visions in an effort to understand where military thought on warfare is headed. 21st century warfighting for the United States will be guided by the broad visions, strategies, and operational concepts set forth by the Chairman of the Joint Staff and his respective Service Chiefs. In all cases these visions and concepts are being updated, not coincidentally, before the time the next Administration takes office and the commencement of the Quadrennial Defense Review in 2001. This chapter outlines future Joint and Service visions as they currently exist in their varied stages of final development. Many will be finalized in the summer of '00, just prior to the next Presidential Administration. Selected force structure issues and historical excerpts are introduced to amplify the visions and related issues. Likewise, areas of consensus and tension are discussed to provide further insight as to how one could expect the Services to play out their roles during QDR '01. These visions lay the cornerstones for how the U.S. military plans to fight in the future.

JOINT VISION 2010

Joint Vision 2010 (JV 2010) was published in July 1996 by then Chairman of the Joint Chiefs of Staff, Gen John Shalikashvili. It served, and continues to serve, as a "conceptual template for how America's Armed Forces will channel the vitality and innovation of our people and leverage technological opportunities to achieve new levels of effectiveness in joint warfighting"²⁷. JV 2010 emphasizes four operational concepts: dominant maneuver, precision engagement, full dimension protection, and focused logistics.²⁸ Such operational concepts seek to achieve full spectrum dominance for the Armed Forces of the 21st century, with a common goal: a joint force that is persuasive in peace, decisive in war, and preeminent in any form of combat.²⁹

JV 2010 recognizes the world is undergoing dynamic change at an ever-accelerating rate. It stresses the

²⁷ JV 2010, July 1996, page 1

²⁸ Ibid

²⁹ Ibid, page 3

imperative of conducting military operations that are fully joint--institutionally, organizationally, intellectually, and technically.³⁰ Additionally, these operations will be conducted multinationally, with new technological advances, against adversaries with enhanced potential and wider range of threats. Most importantly, interwoven throughout the four operational concepts is the critical importance of information superiority. Joint forces must have the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.³¹ It requires both offensive and defensive information warfare constructs. Information superiority binds and inseparably links the four operational concepts. Furthermore, JV 2010 relies upon a quality force of people, exceptionally trained and ready with first -rate equipment, supervised by well-trained leaders.

JV 2010 Operational Concepts

Dominant maneuver stresses the multidimensional application of information, engagement, and mobility capabilities to employ joint forces across the range of military operations in all weather, day or night. Decisive speed and tempo, positional advantage, and full spectrum connectivity focuses overwhelming force via asymmetric leverage that results in the enemy reacting from a position of disadvantage, or better yet, quitting.

Precision engagement is described as a "system of systems that enables our forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to reengage with precision when required"³². It emphasizes US advantages in delivery accuracy and low observable technologies, as well as precise, all weather standoff capability.³³

The primary prerequisite for Full-Dimensional Protection is control of the battlespace to ensure US forces can maintain freedom of action during deployment, maneuver, and engagement. US forces and facilities must have multi-layered protection at all levels. Aerospace and Sea control are fundamental.

The preceding concepts rely on projecting power with the most capable force at the decisive time and place. Focused Logistics optimizes these concepts through responsiveness, flexibility, and precision. The fusion of information, logistics, and transportation technologies must provide rapid crisis response, track and shift assets enroute, and deliver tailored logistics packages directly to any level of operations.³⁴

³⁰ JV 2010, July 96, page 9

³¹ Ibid, page 16

³² Ibid, page 21

³³ Ibid

³⁴ Ibid, page 24

Through the four operational concepts, JV 2010 envisions the US military being able to dominate the full range of military operations from humanitarian assistance up to and into the highest intensity conflict by focusing the strengths of each individual Service.³⁵ JV 2010 recognizes the importance of the affordability of the technologies envisioned to achieve full spectrum dominance. The full promise of the vision is dependent on how well the defense program is structured. Recognizing the budget realities that exist today and into the next century, JV 2010 anticipates the need to be selective in the technologies chosen, noting that “we will have to make hard choices to achieve the tradeoffs that bring the best balance, most capability, and greatest interoperability for the least cost”. It also recognizes the overarching need to maintain the quality of our forces, their readiness, and force structure needed to execute operational tasks between now and the year 2010.

Updating JV 2010 to JV 2020

In August of 1999, the Chairman of the JCS, Gen Shelton, directed the Joint Staff J-5 division to begin preparations for an update to JV 2010 in preparation for the Joint Strategy Review (JSR) 2000³⁶. He directed retaining the four operational concepts, fundamental definitions, and structure of JV 2010. However, he directed refocusing the document toward the 2010-2015 timeframe. In addition, he wanted an expanded vision that addresses the full spectrum of military operations, alliances/coalition and interagency/international operations, and emerging challenges and opportunities (specifically asymmetric challenges and threats as specified by the Joint Strategy Review {JSR} in 1999). Since Aug 99, the CJCS has also emphasized the need for incorporating lessons learned from recent operations (such as Kosovo) and increased Joint / Service future experimentation efforts (such as the joint leveraging experiments underway at the newly formed Joint Forces Command-JFCOM). He reiterated these requirements in Nov ‘99, adding that information superiority will be a future cornerstone of the US military’s ability to react with rapid, relevant response, fight decisively, and win.³⁷ Additionally, as currently written, JV 2010 does not address specific strategy issues, yet the CJCS intends to include these in the next version. The new joint vision, labeled JV 2020, is forecast to be complete in the Spring of ‘00.

THE US AIR FORCE VISION

The Air Force’s Vision is tentatively titled “Global Vigilance, Reach, and Power”. The vision, to be

³⁵ JCS JV 2010, July 1996, page 25 and 34

³⁶ CJCS Guidance to J-5 on JV 2010 Revision, Briefing Slides, Aug ‘99

³⁷ Shelton, Hugh Gen, CJCS Keynote speaker remarks IFPA Conf on Strategic Responsiveness, 2 Nov 99

published in the Summer of '00, will be fundamental basis for what the USAF provides the nation day in and day out, as well as the guiding principle of what the USAF will provide in the future. The USAF firmly believes its unique vision makes for a frontline force for the defense of the nation's interests, and as such it will remain a premier military instrument of U. S. foreign policy in peace and war. The Air Force believes the inherent strengths of modern aerospace power—speed, range, stealth, precision, lethality, flexibility, and perspective—are fundamental to dominance across the full spectrum of aerospace operations. Aerospace power is aptly defined as America's asymmetric advantage, which no adversary can match.

The Air Force Vision is supported by six core competencies derived from its primary roles and functions. These core competencies represent the combination of professional knowledge, airpower expertise, and technological know-how that when applied produces superior military capabilities.³⁸ *Aerospace Superiority* is the capacity to control what moves through air and space. *Information Superiority* is the control and exploitation of the information domain to the Nation's advantage. *Global Attack* is the ability to attack adversary targets anywhere, anytime. *Precision Engagement* is delivering a desired effect with minimal risk and collateral damage. Rapid *Global Mobility* is the rapid positioning of forces anywhere on the globe. *Agile Combat Support* is sustaining flexible and efficient combat operations.

The USAF intends to be a full spectrum, fully capable, modern aerospace force, for military operations around the globe and in space. Guided by this new vision, the Air Force's goal, as described by Secretary of the Air Force F. Whitten Peters, is the conversion from a "fight in place" Cold War Air Force to an Expeditionary Aerospace Force (EAF) that meets NCA requirements.³⁹ As such, two key pillars of AF Vision 2020 are Aerospace Integration and Expeditionary Aerospace Operations.

Aerospace Integration

The Air Force's objective in pursuing the harmonization of its people and systems is to master the application of aerospace power to support the nation's interests. This objective entails fielding a fully integrated aerospace force with the full range of capabilities to control and exploit the aerospace continuum. SecAF Peters stated "Our vision of the future is one of integration of both our systems and our people. We must use the best systems that we have available for each task, without regard to whether that system works in the air or in space, and

³⁸ Murdock, Clark, HQ USAF/XPX "USAF Strategic Vision" Briefing to AF Fellows, 26 Jul 99

³⁹ Peters, Whitten F SECAF Briefing to AF Fellows, 23 Jul 99

fuse them into an integrated whole using the information systems that we are building today.”⁴⁰ The Air Force views the flight domains of air and space as a seamless operational medium, and as such the environmental differences between air and space do not separate the employment of aerospace power within them. Commanders of aerospace power will be trained to produce military effects for the Joint Force Commander (JFC) without any concern for whether they are produced by air or space platforms. The Air Force is committed to a seamless aerospace domain and is focused towards realizing a fully capable aerospace force throughout its employment concepts, doctrine, culture, organization, and equipment/resources.

The characteristics of the Future Aerospace Force reveal air and space fully integrated in the Air Force’s Total Force (active, Air National Guard, and Air Force Reserve), via employment, doctrine, people, culture, organization, equipment, and resources. The Air Force attains mastery of the full range of aerospace capabilities for the joint team, as well as is engaged with the broader aerospace community. The Air Force is determined that its stewardship of space and full integration of Air Force space capabilities into the joint team will establish the Air Force as the recognized leader in meeting the nation’s requirements in space.⁴¹ That makes sense, since presently, the Air Force is responsible for 85% of the total DoD space budget (approximately \$6.9 billion), which is allocated to the Air Force as part (approximately 10%) of its total obligational authority (TOA).⁴² Combined with the National Reconnaissance Organization (NRO), this accounts for 95% of the total DoD budget spent on space. Likewise, the Air Force retains 86% of the assets, and 90% of both national space infrastructure and operating personnel.⁴³ The Air Force is not the only Service or organization that operates in the flight domains of air and space, and they make no exclusive claim to the aerospace continuum. However, the Air Force is charged⁴⁴ with providing the full measure of efficient, effective, and interoperable aerospace capabilities to the JFC, the other Services, and other agencies.

Expeditionary Aerospace Operations

The most revolutionary part of the new Air Force vision is its focus on 21st Century expeditionary aerospace operations. The Air Force will transform into an Expeditionary Aerospace Force (EAF) that is organized, trained, equipped, and sustained to handle expeditionary aerospace operations across the entire spectrum of conflict. The

⁴⁰ Peters, Whitten F. SECAF Briefing to AF Fellows, 23 Jul 99

⁴¹ Murdock, Clark, HQ USAF/XPX “USAF Strategic Vision” Briefing to AF Fellows, 26 Jul 99

⁴² Peters, Whitten F. SECAF Briefing to AF Fellows, 23 Jul 99

⁴³ HQ USAF/XPXS Data, 17 Nov 99

⁴⁴ US DoD Directive 5100.1, “Functions of the DoD and Its Major Components”, 25 Sep 97

EAF is a blueprint for how the Air Force will fight in the future. Global security commitments require expeditionary military operations. Although the Air Force is still forward deployed, they are increasingly called upon to respond anywhere in the world at a moment's notice. Despite a more than one-third decrease in active duty force structure, Air Force deployments have quadrupled since the end of the Cold War.⁴⁵ Significant post-Cold War reductions to overseas basing infrastructure continue to present challenges to the way the Air Force carries out its role in U. S. military presence and power projection. The Air Force has two-thirds less forward basing today than during the height of the Cold War.⁴⁶

The EAF construct effectively exploits the versatility and responsiveness of aerospace power through changes in culture, operations, and structure. Culturally, the Air Force intends to build warriors with an expeditionary mindset, who understand their global mission, and are led through bold, decisive leaders who excel in austere, unpredictable environments. Operationally, the EAF will focus innovative approaches and technologies to provide the NCA light, lean, and lethal aerospace forces that are rapidly employable worldwide. This means smaller deployment footprints, and forces that can deploy in 48 hours or less. Rapid crisis response, with "plug and play" capabilities and support from allies, will achieve presence and interoperability with less vulnerability.

Structurally, the Air Force will reorganize its Total Force into standing Aerospace Expeditionary Forces (AEFs). The EAF will operationally link geographically separated units to form 10 rotational AEFs and two additional on-call, crisis response Aerospace Expeditionary Wings (AEWs). (Note: The AEF structure does not impact respective CINC Title 10 requirements.) Scheduling and restructuring will provide tailored forces for anticipated and no-notice contingency missions. Each AEF and AEW consists of a full complement of air and space assets comprised of the following like capabilities: air to air, precision guided munition (PGM), SEAD, anti-armor, stealth, surveillance, combat rescue, airlift, and air refueling. Low Density/High Demand (LD/HD) assets support all AEFs but are not imbedded due to their limited numbers. AEFs consist of a full complement of manpower drawn from active-duty, Air National Guard, and Air Force Reserve members of the Total Force. Ten AEFs follow a rotation plan so that aerospace forces can cycle through training, deployment, and recovery times while giving the CINCs sufficient ready forces at all times to respond to sudden crises. For normal, planned deployments, the 10 AEFs operate in pairs on a 15-month cycle with planned 90 -day deployments. The two AEWs are always available

⁴⁵ HQ USAF/XPXS Deployment Data and Statistics, 17 Nov 99

⁴⁶ Ibid

for rapid deployment and response. Two deployed AEFs and two standing AEWs (roughly 20% of the deployable force) is what the Air Force can sustain on a daily basis. Normally, the two AEFs will respond to the steady state SSCs such as Operation Northern/Southern Watch (ONW/OSW), or Bosnia/Keflavik/Panama scenarios. If additional combat or support were required above what is resident in the two AEFs, then the Air Force would have to surge higher, adding additional AEFs to augment. However, this would come at a cost.

Since DESERT STORM, repeated ad hoc expeditionary operations have placed an incredible strain on equipment and most especially, personnel. Presently, of the total Air Force, 64% are "deployable", with 25% dedicated to CONUS missions (space and missile), and only 11% considered non-deployable due to student or medical status.⁴⁷ Of the 64% deployable, 40% are "over there" on any given day. As such, the Air Force has experienced an ever-increasing PERSTEMPO and OPSTEMPO with approximately one-third less end strength to cover deployments. The EAF operational concept solves the stresses of exceptionally high deployment rates by spreading the burden of deployments across the Total Force with stable and predictable deployment schedules.

The EAF concept will require extensive reachback and forward / rear area integration through the intensive use of space based assets. C4ISR is similarly highly dependent on space, and in efforts to deliver time critical precision "sensor to shooter" or "sensor to shot" effects, critical links and C3 integration are paramount. Aerospace operations are envisioned as fully integrated manned, unmanned aerial vehicle (UAV), and space platforms via a global grid and air/space/ground datalinks. The ultimate objective is a seamless environment of aerospace operations. Similarly, the EAF concept will require logistical sustainment, especially for fuel and munitions. Agile combat support through rapid global mobility (air and sea) assets is the most challenging cornerstone to AEF concept. AEFs are expected to arrive at their forward operating base prepared to conduct contingency operations for three to seven days. Subsequent munitions support for sustained, high tempo combat operations are estimated at two to three C-17 loads per day.⁴⁸ As with the other Services, varying degrees of regional theater prepositioning and host-nation support is a feasible option, with stockpiles to Southwest Asia and Korea. The USAF Scientific Advisory Board recommended that the Air force Establish regional control centers (RCCs) within 1500 to 2000 miles of potential trouble spots, in addition to two "Super RCCs" in Spain and Diego Garcia, such that they are close

⁴⁷ Peters, Whitten F. SECAF Briefing to AF Fellows, 23 Jul 99

⁴⁸ Nowak, Michael, Lt Col, USAF, "The AEF-A Strategy for an Uncertain Future?", Air War College Maxwell Paper #19, Sep 99, page 12

enough to be rapidly accessed by C-17 or C-130 assets.⁴⁹

Organized around this EAF concept, the Air Force is able to give the warfighting CINCs flexible, tailored, responsive aerospace capabilities. CINCs will not only have robust in-place forces with theater based AEWs and regularly deployed AEFs, but rapid response on-call forces with CONUS AEWs. Tailored forces will meet "shape" and "respond" requirements to OPLANS with a full spectrum of aerospace capabilities. With the EAF concept, the Air Force itself will employ a Total Force with a more predictable, stable schedule. Reduced OPSTEMPO - PERSTEMPO demands on personnel and EQUIPTempo demands on equipment will ensure stability, predictability, and availability of forces for the CINC.

The Vision of a Future Total Force

Although the Air Reserve component (ARC—Air National Guard and Air Force Reserve) of the Air Force dates back to 1917, the ARC has truly been a full partner in Air Force operations since 1973, when the Total Force policy was adopted. DESERT STORM participation was significant, as were Operations in Bosnia and Kosovo. With these recent twenty-six years of closely linked experiences, the Air Force decided to "raise the bar" to meet challenges of the next millennium and expects the ARC to remain a full partner in the joint force.⁵⁰ The Air Force is looking for what they can do better in the area of active component (AC) and ARC integration⁵¹, hence the term *Future Total Force (FTF)*, which fully imbeds itself into the pillars of Aerospace Integration and Expeditionary Aerospace Operations.

The Air Force fully recognized that post Cold War operations required a reconsideration of AC / ARC roles and missions. They needed a flexible ARC that could mobilize as "first responders" for high intensity operations, or with quick forward mobility with an AEF.⁵² The Air Force Chief of Staff, Gen Mike Ryan, explains that "The Air Force is a team-we train together, work together, and fight together. Wherever you find the United States Air Force, at home or abroad, you will find the Active, Guard, and Reserve side-by-side. You can't tell us apart."⁵³

The Air Force's FTF concept encompass fully integrated ARC forces who will train, deploy, and operate together as part of an AEF. ARC units fly and operate state of the art equipment, such as the C-17 and SEAD

⁴⁹ Nowak, Michael, Lt Col, USAF, "The AEF-A Strategy for an Uncertain Future?", Air War College Maxwell Paper #19, Sep 99, page 13

⁵⁰ HQ USAF/XPXQ Brochure "The Future Total Force", page 6

⁵¹ Lyles, Lester, Gen USAF/CV Comments made at IFPA Conference on Strategic Responsiveness, 3 Nov 99

⁵² Peters, Whitten F SECAF Briefing to AF Fellows, 23 Jul 99

⁵³ HQ USAF/XPXQ Brochure "The Future Total Force", page 1

capable F-16CJ Block 50. Likewise, they will receive modern, frontline equipment like the F-22 and Joint Strike Fighter (JSF) once they are fielded. High levels of integration with similar type equipment increase combat effectiveness and reduce Service costs. Additionally, programs such as the Reserve Associate program infuse needed experience back into the AC where manpower shortages are critical (specifically pilots). The Air Force's FTF will play an increasingly critical role in space missions, such as missile warning, satellite operations and information operations.⁵⁴ In terms of airlift and tankers, ARC assets are indispensable to joint deployment and employment operations. Most notably, during OPERATION ALLIED FORCE, 80% the USAF's combined AC and ARC tanker aircrews flew 40% of the USAF's available tanker assets.⁵⁵ The Air Force is planning to further integrate its ARC forces into future FTF units, and will expand on its already combat proven record of successfully employing the ARC by becoming a cohesive aerospace Total Force.

Force Structure

QDR '97 force structure requirements dictated 187 bombers, 12+ active fighter wings, eight reserve fighter wings, and 4 reserve air defense squadrons. Each fighter wing was formerly measured as a "fighter wing equivalent (FWE)". However, the FWE measurement will be no longer valid as the Air Force reorganizes its Total Force into the EAF. Therefore, QDR '01 should dictate USAF force structure requirements based on AEF equivalent measurements, are currently reflected in Defense Planning Guidance (DPG) for '00.

THE US ARMY VISION

The Army's vision "Soldiers On Point for the Nation...Persuasive in Peace, Invincible in War", was released in February 2000. The vision centers on the Army adapting to the changes in the future security environment to remain a strategic instrument of national policy and remain strategically dominant across the entire spectrum of operations. Most significantly, Army Chief of Staff Gen Shinseki is focusing efforts to transform the Army into an objective force that can place a combat capable brigade anywhere in the world within 96 hours after liftoff, a warfighting division on the ground within 120 hours, and five divisions within 30 days.

Fundamental Constructs

Fundamental constructs to the Army's objective force are *responsiveness*, *deployability*, *versatility*, *lethality*, *survivability*, *sustainability*, and *agility*. *Responsiveness* has the quality of time, distance, and sustained

⁵⁴ HQ USAF/XPXQ Brochure "The Future Total Force", page 21

⁵⁵ Esmond, Marvin, Lt Gen, USAF/XO, Briefing given to USAF National War College Students, 10 Nov 99

momentum. It will be improved by manning warfighting units at 100% and fielding forces that not only are forward deployed and positioned, but power-projectible as well. The Army Reserve Component (RC) will become more active in their participation and ability to respond rapidly, transitioning them from the dilemma of the traditional militia force role to a full up partner in all Army AC operations. Full integration efforts will be oriented toward bringing the AC and RC together speaking with "one voice."

Deployability includes Gen Shinseki's timing criteria for brigades and divisions. Not only do these forces need to be able to be strategically deployed by USAF C-17s, but also be able to fit a C-130-like profile for tactical intra-theater lift. Armored vehicles will be reduced to versions at 50-70% less tonnage. Secretary Caldera specifically noted he intends, with investments in science and technology, to bring the weight of Army armor (the M1A1 Abrams tank) from 70 tons down to 20 tons with the same survivability.⁵⁶

Versatility focuses the Army's intent to design into its organizational structures which will, with minimal adjustment and in minimum time, generate formations which can dominate at any point across the spectrum of operations. For example, all divisions to be incorporated in a full spectrum, common design/internetted C4ISR system. ASCCs will be Joint Force Land Component Commander (JFLCC) and Army Force Commander (ARFOR) capable. CORPS headquarters will be reshaped to easily encompass JFLCC, ARFOR, and Joint Task Force (JTF) Headquarter structures if tasked.

Lethality is defined by the elements of lethal combat power (fires, maneuver, leadership, and protection), where every element in the warfighting formation will be capable of generating combat power and contributing decisively to the fight. The Army intends to enhance long range acquisition and targeting as well as early attack. As technology allows, Gen Shinseki intends to erase the distinctions between heavy and light forces, with a general trend toward "medium-weight" forces. Currently, he views heavy forces as too heavy, and light forces as not lethal enough and lacking staying power.⁵⁷ One significant move toward removing this distinction is the Army's announcement to convert the 3rd Brigade, 2nd Infantry Division (Ft Lewis, WA) from a heavy division of 116 M1A1 Abrams tanks and 52 M2 Bradley infantry vehicles to a fleet of lighter "wheeled" vehicles and mobile cannons that can be rushed to the battlefield more quickly.⁵⁸ Additionally, the 1st Brigade, 25th Infantry Division will undergo a

⁵⁶ Caldera, Louis, SecArmy, Interview with Washington Post staff Robert Suro and Bradley Graham, 7 Oct 99

⁵⁷ CSA Briefing to Army Staff "Where We're Going...CSA's Intent", Sep 99

⁵⁸ Seattle Post-Intelligencer, "Reshaped Fort Lewis Bdes Will Take Aim at Quick Global Response", 10 Nov 99

similar redesign, from light to medium-weight.⁵⁹

Survivability describes the Army's effort to derive technology to provide maximum protection to its forces at the individual soldier level. First round hits and kills at smaller calibers will be sought, in addition to low observable technology and ballistic protection for ground and air platforms.

Sustainability attempts to decrease the logistics footprint and replenishment demand. Fundamental efforts are underway to reduce logistical footprint. Specific advances by which to reduce fuel and ammunition weight, if even by 10-20%, would pay significant dividends. Gen Shinseki's focus is to totally reshape the Army into a force that is lighter, leaner, and more lethal, recognizing that the logistical footprint for deployed forces are currently driven by unrealistic replenishment demands.⁶⁰

Regarding *agility*, all divisions will need to become full-spectrum capable, and able to transition the spectrum without loss of momentum. Forces will attain the mental and physical agility to operationally move from stability to support operations, to warfighting and back again. Intensive reach back capability for communications and intelligence will be sought.

Operational Concepts

Part of the Army's new vision includes its perspective on missions and concepts for the conduct of military operations. The Army Senior Planning Group has developed seven fundamental Army mission areas: Deploy, fight, and win major theater war, Promote regional stability, Reduce potential conflicts and threats, Deter aggression and coercion, Conduct small scale contingencies (SSCs), Support homeland defense, and Provide domestic support to civil authorities.⁶¹ Most of these missions are objectively planned for through the Army's requirements determinations of Mission Task Organized Forces (MTOFs). Surrounding these missions is the Army's capstone military operations concept of Advanced Full Dimensional Operations (AFDO)—an integrating concept for employing strategically responsive, dominant full spectrum joint forces.⁶² AFDO's end state is defined as the "rapid and decisive Joint Force contingency response to crises, terminating them in their early stages or placing an opponent at an early, continuing, and decisive disadvantage—strategically precluding escalation..."⁶³ Enabled by information

⁵⁹ Seattle Post-Intelligencer, "Reshaped Fort Lewis Bdes Will Take Aim at Quick Global Response", 10 Nov 99

⁶⁰ Shinseki, Eric, Gen CSA, Eisenhower Luncheon Address, AUSA Annual Meeting, 12 Oct 99

⁶¹ DAMO-SS Briefing on Army Transformation given to OSD/ST&R, 1 Nov 99

⁶² DAMO-SS Briefing to JFCOM Rapid Decisive Operations Seminar, 26 Oct 99

⁶³ DAMO-SS Briefing on AFDO given to NDU QDR '01 WG, 25 Oct 99

superiority and strategic responsiveness, the AFDO concept focuses on two paths, contingency response operations and extended operations using the tools of strategic interdiction and maneuver. Contingency response operations emphasize using strategic interdiction more than strategic maneuver to rapidly deter, terminate, or contain a crisis, and set the conditions for extended operations. Fundamentally, strategic preclusion is sought to arrest or halt escalation and gain rapid conflict termination. Extended operations focus on strategic maneuver, while still using strategic interdiction, to conduct dominating joint operations. Decisive operational victory results, eventually terminating conflict and setting the conditions for and restoring stability.

Envisioned Need for Extensive Transformation

In order to accomplish this vision and keep up with the pace and proliferation of technology, Gen Shinseki has initiated an intensive look across the Army by which "everything is on the table" ⁶⁴ and open for negotiation, in an effort to transform itself from a legacy force to a future objective force. Generally, only 10-15% of the AC force is designated Combat, while almost 85% are either Combat Support or Combat Service Support. The tooth to tail ratio is inordinately high in favor of the "non-shooters". One such way of reducing this high support requirement is to change doctrine and employment concepts to rely on extensive electronic reachback or the capabilities of fellow Joint Service and Allied partners during operations. For example, if given adequate C4ISR, it may have been more cost effective to employ Army military intelligence units from Heidelberg, GE, than deploying them to Tuzla during OPERATION ALLIED FORCE. Similarly, the deployment of 18 multiple launch rocket systems (MLRS) to Tirana, Albania (mandated by traditional Army doctrine for the combat employment of Task Force Hawk AH-64s) cost 542 C-17 sorties and 24,000 short tons. ⁶⁵ Other Service or Allied units may well have been able to support the requirement for SEAD (alleviating the need for the MLRS). As explained in the Joint Statement on the Kosovo After Action Review,--"As we reflect on the challenges associated with TF Hawk, we recognize the need to regularly experiment with the innovative, independent use of key elements of all of our forces in the absence of their usual supporting and supported command elements." ⁶⁶ The gain would have been more airlift available for combat "shooters" not only for the Army, but for the Joint Force Commander (JFC) as well (Note-the 24 AH-64 attack

⁶⁴ Shinseki, Eric, Gen CSA Comments made at IFPA Conf on Strategic Responsiveness, 2 Nov 99

⁶⁵ Air Force Association Special Report "The Kosovo Campaign", Sep 99, and "Airlift Reality Check", Air Force Magazine, Dec 99, page 35.

⁶⁶ Prepared Joint Statement on the Kosovo After Action Review, presented by SecDef William S. Cohen and Gen Henry H. Shelton, CJCS, before the SASC, 14 Oct 99, para VIII, "Other Lessons Learned"

helicopters in TF Hawk were not airlifted to Tirana, but had to fly to Albania on their own).

Systems under critical review include the planned buy of 1,138 Crusader 155mm self-propelled howitzer systems (each system weighing 100 tons at a cost of \$17 million apiece), the Armored Gun System, and the Future Armored Vehicle.⁶⁷ With regard to the Crusader, it is the largest program to be modified, and the Army already intends to cut back and significantly change the program to make it lighter and more affordable.⁶⁸ As presently designed, the Crusader requires two C-5 aircraft to airlift a single gun and its supply vehicle.⁶⁹ Additionally, the Army has proposed killing five other systems, to include the MLRS Smart Rocket, the Army Tactical Missile System (ATACMS) Block IIA missile, and the Block II Stinger missile.⁷⁰ Canceling these systems would be a positive move by the Army to support their emphasis on critical downsizing and signaling a sincere desire to relinquish certain functional capabilities (precision deep attack and point air defense) to other joint force players more suited for the role. By transforming itself into a "leaner and meaner" force, the Army believes the NCA will then have a genuine deterrent capability, that when ordered, can deploy to trouble spots faster than the adversary can complicate the crisis.⁷¹

Force Structure

Currently, the Army is organized under a 10 Division structure mandated by the Quadrennial Defense Review (QDR) in '97. Four divisions exist overseas (two in the Pacific and two in Europe). Six divisions exist in the CONUS (three heavy and three light). Eight Army National Guard Divisions (defined as "strategic reserve"⁷²) exist in the CONUS, with "mixed bag" of equipment and varied levels of readiness in comparison to the AC.⁷³

THE US NAVY VISION

The purpose of the US Navy, as described by the Chief of Naval Operations (CNO) Admiral Jay Johnson in 1997, is to influence, directly and decisively, events ashore from the sea—anytime, anywhere.⁷⁴ Two white papers

⁶⁷ Baltimore Sun, "Chief Seeks a Leaner, Meaner Army", 4 Oct 99

⁶⁸ Inside The Army, "Army Proposes Killing Several Programs, Restructuring Crusader" 15 Nov 99

⁶⁹ Newsweek, "Not Your Father's Army", 22 Nov 99

⁷⁰ Inside The Army, "Army Proposes Killing Several Programs, Restructuring Crusader" 15 Nov

⁷¹ Shinseki, Eric, Gen CSA Comments made at IFPA Conf on Strategic Responsiveness, 2 Nov 99

⁷² DAMO-SSW Objective Force Planning Process Briefing, Sep 99, defined the Army's Strategic reserve as "Those military forces initially uncommitted, but appropriately sized, structured, and resourced for commitment at the appropriate or decisive time to augment or increase the capabilities of immediately available/committed forces"

⁷³ Interview with DAMO-SS, Maj Gen St Onge, 4 Nov 99

⁷⁴ Johnson, Jay, Admiral, USN, Chief of Naval Operations "Anytime, Anywhere...A Navy for the 21st Century", Proceedings, Nov 97

"...From the Sea" (1992) and "Forward...From the Sea" (1994), laid the earlier groundwork for this vision. The latter stated the primary purpose of forward-deployed naval forces is to project American power from the sea to influence events ashore in the littoral regions of the world across the operational spectrum of peace, crisis, and war.⁷⁵ Inherent to this vision are the broad naval missions of sea control, power projection, presence, sanctions enforcement, sealift, and deterrence. "Anytime, anywhere" explains that the Navy, along with its sister services, can and will shape the strategic environment and have a decisive impact from the sea on the crises and conflicts of the future.⁷⁶

Once core strategic concept of the vision is the Navy's special strength stemming from *sea and area control*. Without such control, the Navy cannot project power to command or influence events ashore, cannot deter, and cannot shape the security environment. It recognizes new adversaries will attempt to attack ports and airfields needed for forward deployment of land-based forces. Seen more as an area-denial than sea-denial threat, Sea and Area control will become the single most crucial element in projecting and sustaining U.S. military power where it is needed.

A second core concept is *power projection*. Seen as a great opportunity rather than challenge, Adm Johnson believes the Navy will be able to use sea power in a way that A.T. Mahan could only dream about.⁷⁷ Through the use of long range precision weapons combined with advanced joint information and targeting systems, the Navy will see itself possessing the means to disorient and shock an enemy sufficiently to break his resistance. He envisions hard-hitting future naval campaigns that combine highly mobile Marine operations deep into the littoral with responsive close air and fire support and long-range precision strikes—all mounted and sustained entirely from the sea.⁷⁸

The final core concepts are *forward presence* and *deterrence*. Forward naval presence was seen as always being inextricably linked to conventional deterrence. However, taking it one step further, Adm Johnson states it can also shape the peace. With the number of overseas bases declining, the Navy feels access to facilities in friendly countries can be problematic, especially in times of crises—forward presence can solve that. In addition, presence

⁷⁵ "Forward...from the Sea", USN Operational Concept definition, Mar 97

⁷⁶ Johnson, Jay, Admiral, USN, Chief of Naval Operations "Anytime, Anywhere...A Navy for the 21st Century", Proceedings, Nov 97

⁷⁷ Ibid

⁷⁸ Ibid

allows quick reaction to deny adversary objectives. In terms of deterrence, the irreplaceable element remains with a credible strategic nuclear ballistic missile submarine force. Additionally, however, deterrence also incorporates well into forward presence to prevent conflict.

Since the publication of "Anytime, Anywhere" in 1997, extensive efforts to update the CNO's vision are underway but have not yet been brought to completion.⁷⁹ Adm Johnson revealed insight into this work during a keynote address at the International Seapower Symposium in Nov 99. His "Maritime Strategy for the Naval Century" outlined the developing vision of the U.S. Navy and reiterated "directly and decisively influence events ashore—anytime, anywhere".⁸⁰ He emphasized the need to take advantage of the tremendous opportunities presented by technology in the information age, as well as sharing this critical information instantaneously with coalition forces. Future naval coalitions will have common operational plans as well as modern communications to coordinate warfare efforts across surface, submarine, air, and amphibious warfare. Embedded in this vision is what Adm Johnson describes as the Navy's capstone operational concept of Network-Centric Operations.

Network-Centric Operations

Network-Centric Operations is the means by which the Navy intends to harness the power of the information age. Four supporting concepts form the foundation of network-centric operations. First, *Information and Knowledge Superiority* intends to create information and knowledge advantage relative to potential enemies. The Navy will fight for superiority in this realm of conflict against an adversary, seeking to obtain high quality information processing, display capability, knowledge sharing, and ability to protect systems. Secondly, *Assured Access* to the domains of conflict must occur anytime, anywhere. Naval forces will be configured and trained for the mission of gaining access, signaling to the enemy that the Navy and its coalition partners will have access from over the blue water horizon to the beach and beyond, leaving no sanctuary for the enemy. The third supporting concept is called the *Speed of Effects*. If current measures of deterrence prove inadequate, the Navy intends to have a forward posture to stop aggression before it can start, to alter initial conditions in ways to negate enemy options, and prevent an enemy from using a preferred strategy. The Navy intends not only to manage consequences, but prevent them. Finally, *Sea Basing* recognizes the freedoms and advantages of operating from the sea. The Navy places its total warfighting capability at sea, to include the ability to sense targets and activities from the sea, project defense from

⁷⁹ Tangredi, Sam CAPT, USN, OPNAV Strategy and Concepts Branch, Interview with the author, 16 Nov 99

⁸⁰ Johnson, Jay, Adm, CNO Keynote Address at International Seapower Symposium, Newport R.I., Nov 99

the sea, and cover operations ashore.

In times of war, network-centric *operations* become network-centric *warfare* (NCW).⁸¹ First introduced in January 1998, the NCW concept has evolved to be an underlying theme throughout the Navy, and refocused via the CNO's evolving vision. Defined as a revolution in military affairs (RMA), NCW is "...a fundamental shift from what (the Navy) call(s) platform-centric warfare..."⁸² NCW grows out of and draws its power from the fundamental changes in American society.⁸³ NCW uses the four supporting concepts of network-centric operations, focusing on a detailed understanding of the battlespace and battle time. Supporting NCW is a structural architecture with three critical and interwoven elements: information grids (which enable the architecture), sensor grids (which generate high levels of battlespace awareness) and engagement grids (which exploit the awareness into combat power). Connected by control and information links, these three grids provide the network which enables a shift from attrition-style warfare to a much faster and more effective warfighting style characterized by the new concepts of speed of command and self-synchronization.⁸⁴ Essentially, NCW allows forces to develop speed of command. This speed allows the force to achieve information superiority. Then, acting with that increased battlespace awareness, forces act with speed, precision, and reach to achieve the massing of effects versus the massing of forces. Finally, the results that follow are the rapid foreclosure of enemy courses of action and the shock of closely coupled events, disrupting the enemy's strategy and stopping something before it starts.⁸⁵

Other Significant Efforts

Two other significant efforts have been undertaken by key members of the Navy staff and senior leadership to further shed light on its emerging fundamental ideas: The US Navy Policy Staff Talks and the publication of "Strategic and Operational concepts of the USN".

US Navy Policy Staff Talks represent the current perspective of the OPNAV Strategy and Concepts Branch (N3/N5) enveloping the fundamental vision of the CNO around a Maritime Strategy for the 21st Century.⁸⁶

The "means" by which the Navy will pursue its strategy is through Forward Presence (via the sea) and Knowledge

⁸¹ Johnson, Jay, Adm, CNO Keynote Address at International Seapower Symposium, Newport R.I., Nov 99

⁸² Johnson, Jay, Adm, CNO Address at the USNI Annapolis Seminar, 23 Apr 97

⁸³ Cebrowski, Arthur VAdm, USN and Garstka, John "Network-Centric Warfare...Its Origin and Future", Proceedings, Jan 98

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Concepts summarized from the N3/N5 Briefing "A Navy for the 21st Century", given to AF Fellows, 26 Jul 99

Superiority (via cyberspace). Forward Presence is the Navy's enduring role spelled out in the CNO's vision. Knowledge Superiority is founded in the principles of NCW, and is considered an emerging core naval competency. The "ways" that the Navy expects to accomplish Forward Presence and Knowledge Superiority is through Battlespace Control, Attack, and Sustainment. Of note is the fact the Navy defines the battlespace outside of traditional definitions, in that its boundaries are based on military objectives rather than geographic domains of sea, air, and land. In fact, the battlespace itself is a seamless meld of these three domains, and also includes space and cyberspace. NCW operates continuously within this battlespace to maintain high awareness and speed of decision making. The eventual "ends" of this maritime strategy are regional stability, deterrence, timely crisis response, and warfighting and winning.

"Strategic and Operational Concepts of the USN" was published in January 1999. An insightful perspective by two naval officers working in OPNAV Strategy and Concepts Branch, this analysis mapped the CNO's emerging vision to the joint strategic and operational concepts in JV 2010.⁸⁷ It described the Navy as a full spectrum Navy, capable of shaping the international environment and responding to crises. Four specific attributes define the 21st Century Navy as outlined in the strategic concepts of "Anytime, Anywhere": *Sea and Area Control, Power Projection, Forward Presence, and Deterrence*. Likewise, the study developed four operational concepts that act as key enablers: *naval fires, naval maneuver, cooperative protection, and sustainment*.

Force Structure

QDR '97 mandated the Navy retain a force structure centered around the core of 12 carriers with 10 active air wings and their associated carrier battle group (CVBG) structure, to include a total of 300 ships and submarines. Included by the QDR As such, this was a platform-centric model for warfighting. With the advent of NCW and its network centric philosophy, the Navy expects to reform its CVBG construct into one that encompasses a Joint Task Force capability with Navy CVBG commanders filling the role of JTF commanders.⁸⁸

Secretary of the Navy, Richard Danzig, stated he thinks 12 CVBGs is "a workable number"⁸⁹. Given the choice, he would rather strengthen the people side of the Navy rather than increasing the number of platforms. Still, he is encouraging focus on the idea of increasing the size and capability of the submarine force.⁹⁰ Along with the JCS

⁸⁷ Tangredi, S CAPT, USN and "Strategic and Operational Concepts of the USN", The Submarine Review, Jan 99

⁸⁸ Ibid

⁸⁹ Defense Daily, "Danzig Weighs Options For a Bigger Sub Fleet" 25 Oct 99

⁹⁰ Ibid

Submarine Study, the Navy is looking at three options: build new, expensive Virginia class subs (at a cost of \$2 billion each), refuel and convert aging Los Angeles class subs (at a cost of \$200 million each), or convert Ohio-class subs (nuclear capable Tridents) to conventional SEAL team delivery/TLAM guided missile subs-SSGNs (at a cost of \$420 million each).⁹¹ Fundamentally, each choice has different mixes of costs and benefits, and Sec Danzig needs to decide if he will make more investments in submarines, and if so, which route to take. One such issue in favor of the SSGN concept is that giving it a TLAM capability will allow Arleigh Burke-class destroyers and future DD-21 destroyers to pick up theater ballistic missile defense roles. Regarding carrier air, the Navy's F/A-18 E/F fighter will fill the long-range attack gap left by the full retirement of aging A-6 Intruder aircraft several years ago. Sec Danzig is determined to not tolerate any cost growth in the program.⁹² He feels that differing evaluations on other conceptual ideas, such as the Arsenal and "Streetfighter" ships, is healthy for the Navy as they transform their forces for the 21st century.

THE US MARINE CORPS VISION

The USMC Vision builds upon the Department of the Navy's vision of "Forward...from the Sea" with a keystone concept described as Operational Maneuver from the Sea (OMFTS). As such, it reveals revolutionary ways of thinking about the USMC's primary mission--expeditionary, littoral, and amphibious operations. OMFTS deals explicitly with the full spectrum of challenges the USMC expects to face, the dangers and opportunities created by new technologies, and the very exciting prospect of adapting the tradition of maneuver warfare, not merely to amphibious operations, but to all aspects of warfare in, and around, coastal waters.⁹³ OMFTS is specifically the application of maneuver warfare to a maritime campaign, often described as a "marriage between maneuver warfare and naval warfare...with an unprecedented emphasis on sea-based operations in the littorals"⁹⁴ Marine forces will engage to and from the sea executing timely forced entry, as well extrication, operations.⁹⁵ The beach is no longer a focus for operations, but merely a phase line. As such, the USMC envisions operating up to 150-nm inland, advancing from a mobile, protected sea base.⁹⁶ Using the sea as a maneuver space, sanctuary, and protective

⁹¹ Defense Daily, "Danzig Weighs Options For a Bigger Sub Fleet" 25 Oct 99

⁹² Ibid

⁹³ Krulak, C.C. Gen, Commandant, USMC, Introductory comments on OFMTS, 4 Jan 96

⁹⁴ Lazisky, Richard R., "A New Course, An Unprecedented Vision", Sea Power, Nov 1999

⁹⁵ Rhodes, J.E., Lt Gen USMC, Commanding General MCCDC, Comments to NDU QDR '01 WG, 16 Nov 99

⁹⁶ Zotti, Steve, Lt Col, USMC Strategic Initiatives Group, "USMC Concepts and Future Capabilities" Brief given to author, 13 Oct 99

barrier/buffer, OMFTS attempts to generate overwhelming tempo and momentum, pitting strength against weakness and dealing decisive blows. High emphasis is placed on intelligence, deception, and flexibility, and critical integration of all available organic, joint, and combined assets. OMFTS is also applicable across the complete range of urban warfare contingencies known as "three-block wars," in which 21st Century Marines expect to find themselves simultaneously conducting peace operations, humanitarian assistance, and intense combat, all within the same area.⁹⁷ Supporting implementation concepts under the umbrella of OMFTS include Ship to Objective Maneuver (STOM), Beyond C2, MPF 2010 and Beyond, and Military Operations in Urban Terrain (MOUT).

Ship to Objective Maneuver (STOM)

STOM employs the concepts of maneuver warfare to project a combined arms force by air and surface means against inland objectives. Ship-to-objective maneuver takes advantage of emerging mobility and command and control systems to maneuver landing forces in their tactical array from the moment they depart the ships, replacing the ponderous ship-to-shore movement with true amphibious maneuver. Historically, reliance on Navy command and control during ship to shore movement and the requirement to establish a lodgment ashore worked to counter the principles of maneuver warfare. By executing ship-to-objective maneuver, landing forces will exploit advanced technologies that will permit combined arms maneuver from over-the-horizon attack positions through and across the water, air, and land in the littoral battlespace directly to inland objectives. True ship-to-objective maneuver is not aimed at seizing a classical beachhead, but at thrusting combat units ashore in their fighting formations, to a decisive place, and in sufficient strength to ensure mission accomplishment. Landing forces will engage enemy units only as necessary to achieve the freedom of action to accomplish operational objectives.⁹⁸ The intent is to deny enemy warning and reaction time using combined arms maneuver from over the horizon. It is postulated that by requiring the enemy to defend a vast area against USMC seaborne mobility and deep power projection, naval forces will render most of the enemy force irrelevant.

Some key challenges must be overcome for STOM to succeed. In terms of fire support, typical STOM engagements are envisioned against objectives 150 to 200nm inland, primarily via a force projected by air via MV-22 aircraft, protected by multi-role Joint Strike Fighter (JSF) aircraft. JSFs (reliant on technologies gained from the

⁹⁷ Krulak, C.C., Gen, Commandant, USMC, and Rhodes, J. E. Lt Gen, USMC, Commandant, MCCDC "USMC Warfighting Concepts for the 21st Century" 1998

⁹⁸ STOM concepts summarized from "STOM" Marine Corps Combat Development Command, 25 Jul 97

F-22) will have almost twice the combat range and combat payload of current AV-8Bs launched from littoral LHDs in the Amphibious Ready Group (ARG). The JSF will provide air superiority coverage and also be able to conduct SEAD in support of the airborne MV-22 STOM force. However, this will be at a significant reduction to the JSF's inherent stealth characteristics as high-speed anti-radiation missiles (HARMs) will have to be carried externally. F/A-18C are presently available to fulfill this role as well, but must be launched from carriers safely positioned well off shore, outside the range of shore threats. Conceivably, if the range for safe carrier operations is excessive (beyond 75-100 nm), F/A-18C fighter operations will be range limited, if flown unrefueled.⁹⁹ Typical combat loaded F/A-18C aircraft have an unrefueled combat radius of approximately 300-350 nm. (Note: the USMC will not receive any of the Navy's planned buy of 548 F/A-18 E/Fs). Present naval surface fire support (NSFS) is inadequate to support the long range STOM concept, as available surface assets only provide coverage up to 13 nm (using five-inch guns). The Navy's planned extended-range guided munition (ERGM) will increase this range to 73 nm provided gun platforms are available.¹⁰⁰ Aside from MV-22s, STOM will also be conducted with new Advanced Amphibious Assault Vehicles (AAAVs). However, littoral mine threats must be breached as the AAAVs transit the beach area moving combat power ashore.¹⁰¹ Vertical lift aviation assets will also be heavily tasked to conduct resupply operations in addition to building combat power ashore. As such, they may quickly reach task saturation. Results from a Naval War College quantitative analysis of OMFTS / STOM support requirements (Fall '97) reflect there must be either a shift to more lethal landing forces with smaller logistics demands, or a sizable increase in airlift capability.¹⁰²

Beyond C2

Beyond C2 is the concept for comprehensive command and coordination of the Marine Air-Ground Task Force (MAGTF). It fully supports OMFTS and serves as the cornerstone for joint and combined operations. The fundamental aim is to empower commanders at every level to focus resources upon a mission, while enabling the inventiveness and initiative of subordinates. Characteristics of Beyond C2 are: facilitation of

⁹⁹ As with Navy carrier launched aircraft, combat loaded Marine F/A-18s and especially AV-8Bs have similar range limitations without in flight air refueling, normally accomplished by land based USMC HC-130 tanker aircraft or USAF KC-10s and specially modified KC-135s. For more information, see "Desert Fox: The Third Night", by Major Ross Roberts, USMC, Proceedings, April 99.

¹⁰⁰ Davis, J. P. Maj, USMC "STOM: Will This Dog Hunt?" Proceedings, Aug 98

¹⁰¹ Ibid

¹⁰² Ibid

interconnectivity/reachback, support of OMFTS, effective performance across the range of operations, creation of a learning organization, encouragement of intuitive decision making, enabling of mutual understanding with limited exchange of data, and exploitation of the power of implicit communications.

Maritime Prepositioning Force (MPF) 2010 and Beyond

MPF 2010 and Beyond is the concept by which next-generation MPFs will contribute to forward presence and power projection. It is best illustrated through four pillars of future MPF operations: force closure, amphibious task force (ATF) integration, indefinite sustainment, and reconstitution and redeployment. Force closure will provide for the at-sea arrival and MAGTF assembly at sea at the MPF (given sufficient lighterage), eliminating the requirement for access to secure ports and airfields. Marine forces will deploy via a combination of surface mobility means and airlift, including the MV-22, to meet MPF platforms while they are underway and enroute to objective areas. Upon arrival at the objective area, the formed MPF MAGTF is ready for operations. As a result, the logistical tail of landing forces will be smaller, ship-to-shore movement faster, and operations ashore able to start without the traditional "buildup phase".¹⁰³ ATF integration will incorporate the use of MPFs in selective offload capabilities to reinforce assault echelons directly enroute to objectives. Indefinite sustainment will occur as the MPF 2010 serves as a sea-based conduit for logistics support flowing from bases located in the US or overseas. Reconstitution and redeployment will occur on board MPF 2010 without a requirement for extensive materiel maintenance or replenishment at a strategic sustainment base. The ability to rapidly reconstitute the MPF MAGTF will allow immediate employment in follow-on missions.

Future Military Operations on Urbanized Terrain (MOUT)

The USMC feels the tide of expanding urbanization in the developing world has increased the likelihood Marines will again be called upon to operate in urban areas.¹⁰⁴ In 1990, there were over 270 cities with populations of over one million. By 2015, it is estimated there will be well over 500.¹⁰⁵ By the year 2025, it is estimated that three fifths of the world's population (five billion people) will live in urban areas.¹⁰⁶ MOUT has often been described as a "Three Block War", where Marine forces may be required conduct humanitarian, peace making, and

¹⁰³ Hoffman, Frank G, "JV 2010 - A Marine Perspective", Joint Forces Quarterly, Autumn/Winter 1997-1998

¹⁰⁴ Van Riper, P. K. Lt Gen, USMC MCCDC, Introductory Comments on Future MOUT, 25 Jul 97

¹⁰⁵ Zotti, Steve, Lt Col, USMC Strategic Initiatives Group, "USMC Concepts and Future Capabilities" Brief given to author, 13 Oct 99

¹⁰⁶ Figures and concepts extracted from "Future MOUT", Marine Corps Combat Development Command, 25 Jul 97

house to house fighting within city blocks of the same urban area.¹⁰⁷

Urban terrain is an extraordinarily intricate blend of horizontal, vertical, interior, and exterior forms superimposed upon the landscape's natural relief, drainage, and vegetation. As such, urban terrain influences the conduct of military operations to a greater degree than does any other terrain. Unique to MOUT is the phenomenon that the conduct of operations can radically alter the physical nature of the terrain in ways and to an extent not experienced in other environments. Urban terrain is also highly restrictive, limiting observation distances, engagement ranges, weapons effectiveness, and mobility. These factors tend to force extremely close combat with troops fighting from building to building and from room to room, with very high risk of casualties. During the USMC Urban Warrior Advanced Warfighting Experiment in Mar '99, Marines sustained average of 36% casualties in the simulated exercise.¹⁰⁸ Col Gary Anderson, Chief of Staff of the Marine Corp Warfighting Laboratory explained "When we get in full scale urban combat, we don't do that as well as we should."¹⁰⁹ Command and control is difficult, because small unit leaders often cannot see their troops and radio communication is subject to interference caused by the presence of structures. Navigation in torn up "urban canyons" is likewise complicated. The USMC vision for MOUT is based on an understanding that urban warfare traditionally devolves into attrition-style warfare. The Marines are aggressively working on the challenges, with an eventual goal of reducing expected casualties to 15% or less.¹¹⁰

In order to overcome existing limitations, casualties, and collateral damage, future MOUT will be conducted under the premise of maneuver warfare.¹¹¹ Operational capabilities that will enhance this warfare are adaptable command and control, multi-spectral mobility (three-dimensional through urban terrain), measured firepower (both the greater amount to achieve effects, as well as the demand for reduced lethality to reduce non-combatant casualties), adaptability, awareness, survivability, and sustainability. Additionally, the USMC anticipates extensive use of aerospace power during MOUT. Whether it be from the MAGTF, a sister service, or coalition ally, aerospace power, when coupled with comprehensive intelligence and strategic targeting, can indeed overcome some of the difficulties associated with combat in an urban area. Assets such as fighters and helicopters fitted with laser

¹⁰⁷ Krulak, C. C. Gen, USMC "The Three Block War"

¹⁰⁸ "Marines Trying to Reduce Urban Casualty Rate", Defense Daily, 11 Aug 99

¹⁰⁹ Anderson, Gary, Col, USMC, "Marines Trying to Reduce Urban Casualty Rate", Defense Daily, 11 Aug 99

¹¹⁰ "Marines Trying to Reduce Urban Casualty Rate", Defense Daily, 11 Aug 99

¹¹¹ Concept extracted from "Future MOUT", Marine Corps Combat Development Command, 25 Jul 97

designators and airborne target acquisition (ATA) systems, AC-130s airborne gunships, UAVs (Dragon, Burro, and Pioneer), and satellite imagery are expected to play significant roles in the success of MOUT.¹¹² In June '99, further Marine experimentation with close-air support in cities was deemed "fairly successful."¹¹³ The Air Forces concurs that ground forces need the perspective of a city that is obtainable only from air and space if they are to operate there effectively. Likewise, aerospace forces may need the perspective of a city that is obtainable only from troops on the ground if they are to bring their power to bear most effectively.¹¹⁴ Urban terrain offers dismounted adversaries the opportunity to disperse and hide, intermingle with the local populace, and establish defenses in or around hospitals, schools, and religious sites.¹¹⁵ This creates severe combat ID limitations for long range sensors, such as JSTARs. Given aggressive efforts to develop more effective MOUT tactics, we can hopefully erase the grim spectre of our nation's most recent and costly urban engagement in Somalia.¹¹⁶

Force Structure

QDR '97 mandated that programmed USMC forces would be maintained at an active force of three Marine Expeditionary Forces (MEFs), each comprising of a command element, division, aircraft wing, and service support group, as originally specified by the National Security Act of 1947 (and as amended by Title 10, USC, 1952). Overall, this would translate into 12 amphibious ready groups (ARGs). FY 2003 would also maintain one Reserve division/wing/service support group with a reduction in Reserve end strength.¹¹⁷ This reserve division (the 4th Marine Division) is designed to backfill active units during combat operations. The fundamental fighting unit of the USMC is the Marine Expeditionary Unit (Special Operations Capable) (MEU{SOC}). At any given time, three MEU (SOC)s and three Maritime Prepositioned Squadrons (MPS) are forward deployed afloat, available to provide combatant commanders a forward deployed, rapid crisis response capability by conducting conventional amphibious and selected maritime special operations.

The Marine Corps plans to revive its expeditionary brigade organization (Marine Expeditionary Brigade -

¹¹² USMC Warfighting Laboratory Urban Warrior Aviation LTA "Answers to Questions" 31 May 99

¹¹³ Anderson, Gary, Col, USMC, "Marines Trying to Reduce Urban Casualty Rate", Defense Daily, 11 Aug 99

¹¹⁴ Callard, James, Col USAF "Aerospace Power Essential in Urban Warfare" Aviation Week & Space Technology, 6 Sep 99

¹¹⁵ Riggins, J, Lt Col USAF and Snodgrass, D, Lt Col USAF, "Halting the Myths: Understanding and Applying a Joint "Halt-Phase" Concept", National War College Paper, 3 May 99. Also published in Parameters, Autumn '99

¹¹⁶ U.S. Forces suffered nearly 70% casualties, including 18 dead, during the Oct '93 Mogadishu urban firefights in Somalia. See "The Emerging Strategic Environment", by Murray, Williamson, 1999 - Chap 7, page 172, by Hoffman, Frank

¹¹⁷ QDR '97 Report, May 97, page 30

MEB) in order to assist the joint warfighting CINC with a larger force to conduct contingency operations.¹¹⁸ MEBs existed in the late 80s, but due to economies of resources and people, they were eliminated during force reduction rounds. Instead, MEB mission requirements were placed into the MEF structure. Generally, it is envisioned that the MEB will be the next size up from a MEU, with a force size of about 16,000 Marines (MEUs contain approximately 2,200). The MEF will be just beyond the MEB in terms of size and capability.¹¹⁹ In addition, the return of the MEB will not signal a build-up of MEB headquarters units, because manpower resources do not exist. The Navy will have to catch up in terms of shipbuilding with the lift capacity required of the MEB. Presently, its three ship ARGs can only support 2.1 MEBs. Upon completion of its last LPD-17 class ship in 2008, the Navy will be able to support the USMC goal of 2.5 MEBs.

JOINT AND SERVICE VISIONS COMPARED

The operational concepts laid out in JV 2010 can be used as an evaluative tool to compare Service Visions. Significant components of each Service vision, operational concept, and proposed core competency can be mapped to JV 2010 (See Figure 2-1). Though not an exact, scientific categorization, Figure 2-1 merely to lays out where the Services share parallels and consensus. Semantics and labels aside, some common threads are readily apparent, albeit specifically interpreted and tailored by each Services' own competencies.

SEE FIGURE 2-1

¹¹⁸ Comments made by the Commandant of the Marine Corps, Gen James Jones, "Marines to Revive Expeditionary Brigade" Defense Daily, 2 Nov 99

¹¹⁹ Ibid

Figure 2-1

JV 2010 / SERVICE VISION AND KEY CONCEPT COMPARISONS

JV 2010	FULL SPECTRUM DOMINANCE	DOMINANT MANEUVER	PRECISION ENGAGEMENT	FULL DIMENSIONAL PROTECTION	FOCUSED LOGISTICS	INFORMATION SUPERIORITY	TECHNOLOGICAL INNOVATION
US AIR FORCE	Global Vigilance, Reach, and Power Full Spectrum Aerospace Force Expeditionary Aerospace Ops	Global Attack Air &Space Superiority EAF	Precision Engagement Global Attack	Air &Space Superiority Information Superiority	Rapid Global Mobility Agile Combat Support	Information Superiority	Innovation & Adaptation Information Superiority
US ARMY	"Strategic Dominance" MTOF AFDO	Bde 96 hours Div 120 hours Five Divs 30 days Deployability Agility Versatility	Lethality "Strategic Preclusion"	Survivability Responsiveness	Sustainability	Full Spectrum C4ISR	"Lighter/Leaner"
US NAVY	"Anytime, Anywhere" Forward Presence Power Projection	Forward Presence Power Projection Timely Crisis Response	Power Projection Battlespace Attack Naval Fires Naval Maneuvers	Power Projection Forward Presence Sea and Area Control Battlespace Control	Sustainment Forward Presence Power Projection	NCW Knowledge Superiority	NCW
US MARINE	OMFTS	OMFTS STOM	STOM MOUT	Inherent throughout all concepts	MPF 2010 & Beyond OMFTS STOM	Beyond C2 NCW	Beyond C2 NCW

Areas of Consensus

In general, each Service vision supports JV 2010 and in one way or another has adopted the four operational concepts into their own Service visions. There appears to be some high-level consensus regarding common perspectives and goals. Each Service seems to have shaped their respective visions around JV 2010 to ensure they are on complementary tracks toward the 21st Century. Noted Senior Congressional leaders agree with this approach.¹²⁰

Each Service fundamentally views full dimensional protection and information superiority in very much the same way—critical to successful operations. Air, space, and sea control are non-negotiable, and changing paradigms are beginning to include information operations as a form of “electronic sword” and method of “cyber-maneuver”. Additionally, each Service is stepping out smartly with technological innovations aimed at improving Service operations and their contribution to the joint effort. In the case of the Navy’s NCW concept, the Marines are fully supportive. Said Lt Gen John Rhodes, “I see a great deal of mutual agreement between the concept of operational maneuver and this latest effort to capture the opportunities presented by the explosion of information technologies. OMFTS and NCW support a common vision of decisive operations in the chaotic littoral environment.”¹²¹

Regarding precision engagement, the Service perspectives vary in the tools used, though the definition of “engagement” can vary greatly—from classic force on force contact and target attrition, to target location and the creation of desired effects. Services are striving for longer-range standoff with a “one-shot, one kill” capability. The complex issue still remaining to be solved is combat identification (CID) of surface targets at long ranges. Focused logistics varies only in the depth needed to support operational or tactical units. The Air Force, Navy, and the Army see their contribution to focused logistics on a strategic plane significantly supporting other Services operations during the joint campaign.

Understandably, dominant maneuver varies greatly with respect to whether space, air, sea, or land weapons are being used. However, without any doubt, the Services unanimously concur that maneuver, in any form, must have the ability to be rapid, timely, and responsive. Light, lean, and lethal are common undertones. Most significant is

¹²⁰ Sen Lieberman, member of the SASC, emphasized a “shared vision and consensus was needed” for the Services, IFPA Conference on Strategic Readiness, 2 Nov 99

¹²¹ Rhodes, J. E., Lt Gen, USMC Commandant of MCCDC, “Network Centric Works for Marines”, Proceedings, Sep 98

that each Service specifically stresses the importance of rapidly confronting any adversary action to preclude further escalation. Not surprisingly, this wording is similarly reflected in the military strategy portions of QDR '97 and the National Security Strategy '00.¹²²

Areas of Tension

However, there are isolated areas of JV 2010 which lead to criticism as well inter-Service debate due to somewhat vague statements and insufficient explanation. This consequently leads the concepts left open to interpretation. For example, JV 2010 proposes that US forces "will be increasingly able to accomplish the effects of mass the necessary concentration of combat power at the decisive time and place with less need to mass forces physically than in the past."¹²³ However, it goes on to state "To be sure, this will not obviate the ultimate need for 'boots on the ground' in many operations...".¹²⁴ Service debates on the "ultimate need" for "boots on the ground" center not so much in the need, as much as to when these boots should be applied.

Services also criticize JV 2010 for too few references on the need for high quality people and professional training, remaining clearly focused on technological aspects of war. It has been profoundly said that we must avoid the illusion of attempting to impose certainty on the battlefield.¹²⁵ Technology offers improvements in the speed and accuracy of human decision-making, but it can't eradicate the impact of friction, fog, and chance in warfare. Although technology enhances the ways and means of fighting, it can't eliminate the myriad of factors that make war a distinctly human endeavor.¹²⁶

Another area of tension with JV 2010 is that Full Spectrum Dominance should not be misinterpreted to mean worldwide continuous spectrum dominance—though it often is. As defined in JV 2010, US forces should have the capabilities that enable them to dominate the full range of military operations. Thus, US forces must have an ability to employ successful across the scale. However, this is not to say that the CJCS expects to have the US military resources, though capable of responding across that scale, available at all times to cover the full spectrum

¹²² QDR '97 and NSS '00 language on this concept is almost identical. With regard to NSS '00, it emphasizes "...we must maintain the ability to rapidly defeat initial enemy advances short of the enemy's objectives in two theaters in close succession. We must maintain this ability to ensure that we can seize the initiative, minimize territory lost before an invasion is halted and ensure the integrity of our warfighting coalitions. Failure to defeat initial enemy advances rapidly would make the subsequent campaign to evict enemy forces from captured territory more difficult, lengthy, and costly, and could undermine U.S. credibility and increase the risk of conflict elsewhere."

¹²³ JCS JV 2010, July 1996, page 18

¹²⁴ Ibid

¹²⁵ See "Clausewitzian Friction and Future War" by Watts, Barry, McNair Paper #52, NDU, Oct 1996

¹²⁶ Hoffman, Frank G, "JV 2010 - A Marine Perspective" Joint Forces Quarterly, Autumn/Winter 1997-1998

world wide at all times. As with force structure, hard choices must be made as to when to engage and when not to. That decision is left to the National Command Authority (NCA). JV 2010 proposes to give the NCA exceptionally flexibility with a full spectrum dominant force to be wisely applied as an instrument of national military strategy. However, to reiterate, JV 2010 does not (and should not) imply a full spectrum dominant force must be simultaneously allocated against all situations at all times.

Ultimately, key questions remain...should the updated JV 2020 be the authoritative cornerstone for Service Visions? Is it possible to have such a document when strong Service cultures exist? Can JV 2020 survive translation to the implementation of joint warfare with regard to levels of Service participation? Perhaps the answers lie in understanding the meaning of true "jointness"

A VISION OF TRUE "JOINTNESS"

With the passing of the Goldwater-Nichols DoD Reorganization Act in 1986, our military forces began the journey towards team warfare, exploiting each own Service's unique competencies to compliment and effect synergy on the combat of operations, and the vision of "jointness" became engrained in our daily taxonomy. Yet it has been emphasized that we must not harmonize the functional capabilities of the Services into a "colorless paste".¹²⁷ Each of the Services has its own legacy, such as fighters, bombers, aircraft carriers, amphibious warfare, and armor, and therefore, competition between the Services, properly managed, leads to more innovative approaches.¹²⁸ Dr. Eliot Cohen states that "Soldiers, sailors, and airmen inhabit very different worlds and have very different cultures. This differentiation of service cultures is inevitable, bred by the physical environments in which soldiers, sailors, and airmen operate. It is also highly desirable."¹²⁹ As such, the singular joint vision of JV 2020 would be acceptable as a cornerstone as long as it recognizes and allows for Service individualism and the performance of Service specific competent tasks.

Similarly, true jointness need not require each of the Services to have an "equal opportunity" to perform the named tasks and missions.¹³⁰ True jointness in warfighting is a coordinated, complimentary, synergistic effort

¹²⁷ Mundy, Carl E, Gen, (Ret) former Commandant of USMC, "Cautions on Goldwater-Nichols", Joint Forces Quarterly, Autumn XX, p21

¹²⁸ "The Emerging Strategic Environment", Murray, Williamson – Chapter 7 "Goldwater-Nichols After a Decade" by Hoffman, Frank, 1999

¹²⁹ Cohen, Eliot A., "What to Do About National Defense", Commentary, Nov '94, p 30

¹³⁰ Dugan, M, Gen, Former Chief of Staff, USAF, Comments summarized in "The United States as a 21st Century Aerospace Power", Conference Summary Report prepared by The Institute for Foreign Policy Analysis, Apr 99

towards the violent defeat of an adversary in the most rapid, decisive manner with the most effective tools available. It clearly acknowledges the degree of participation by the Services who employ these tools as irrelevant when compared to the resultant effectiveness once the tools have been applied. As stated in Joint Publication, 3-0, Doctrine for Joint Operations, "The goal (of joint warfare) is to increase the total effectiveness of the joint force, not necessarily to involve all forces, or to involve all forces equally."¹³¹ However, even the value of the degrees of participation in joint operations is often hotly debated. For example, valuable lessons learned from OPERATION ALLIED FORCE in Kosovo have been relegated into the background by superceding statements throughout the press and literature over which Service deserves the credit, further widening the gap on jointness.¹³²

Regretfully, despite a logical and noble intent, concepts on jointness and joint team warfare often get obscured when Services have to compete for fundamental force structure programs and seek to increase their topline of total obligational authority (TOA). While each Service honestly believes in the complementarily effective capabilities each brings to wage high-end joint warfare, they understandably are pressured to protect their own programs instead of focusing on how to best build an effective joint force structure for the good of National defense. Consequently, the bureaucratic politics inside the Pentagon rage so furiously that often nothing short of a "Goldilocks Approach" (equal sums for all) is unanimously satisfactory. This can have an insidious, expensive effect. Fresh "out of the box" concepts relating to the effective application of joint military power are at risk to be sacrificed in order to conduct more inefficient "joint for joint's sake" operations where every Service is equally involved and participates to equal degrees. This could lead to little or no relevance to the analysis of the appropriate balances of forces needed for portions of the joint operation. Effective warfighting functions and capabilities then often become secondary to Service participation. A Little League mentality where "everyone gets to play" under the coach (the warfighting CINC) is certainly not what was originally envisioned by true jointness.

True, it is doubtful we will ever permanently get rid of the programmatic debates and heated discussions over Service relevance and participation, yet their effect could be minimized in an improved atmosphere of trust.

¹³¹ Joint Publication 3-0, "Doctrine for Joint Operations", 1 Feb 95, page II-5

¹³² For sample Service perspectives on Kosovo, see VADM Daniel Murphy's, CDR 6th Fleet testimony to Senate Armed Services Sea Power Subcommittee, 13 Oct 99. Also, see Lt Gen Short, AFSOUTH, testimony to SASC Lessons Learned in Kosovo 21 Oct 99. Additionally, see Lt Gen John Hendrix, Commander, US Army V CORPS interview with European Stars and Stripes, 11 Sep 99. For a summary view, see Gen Clark, SACEUR, testimony to SASC on Lessons Learned in Kosovo, 21 Oct 99 ref the victory in ALLIED FORCE and the success of the air campaign.

This can be best summed up in the words of Lt Gen Horner, the Joint Force Air Component Commander (JFACC) for DESERT STORM, who reflected “ We had an unusually strong team, and trust was the key factor. Land, sea, air, and space were all sub-elements of the overall campaign; there was no room for prima donnas. You need people schooled in their own type of warfare, and then you need to trust each other.”¹³³

VISIONS THAT WIN WARS

It is the combination of joint and Service visions that focus the military toward winning future wars. JV 2020 could appropriately serve as the cornerstone that links Service visions toward this ultimate objective—to fight and decisively win. Many comparisons between the Services visions exist. However each is understandably tailored to specific cultures, competencies, and capabilities—and that is most certainly a desirable and acceptable quality of a truly synergistic force.

Undeniably, there have been, and will continue to be, Service specific functions and capabilities that will dominate and be decisive towards successful execution and completion of any joint warfight. However, there may not always be the same required capabilities in every scenario. Clearly, the US military must define which functions and capabilities will be required most often in the future, and prepare accordingly. For example, in future conflicts, will dominance and decisiveness primarily lie in information superiority? Will it lie in light, lean, and lethal land forces and rapid, global mobility? What about naval surface power? Does it exist in long range precision strike and fully internetted C4ISR? What then, is the appropriate balance? If so, how much and in what combination should our force structure be adapted? Ultimately, joint and Service visions serve as the templates we can apply in seeking these answers, and determining how to fight and decisively win high-end warfare---where the use of the right force, at the right time, at the right place, will bring victory.

¹³³ Horner, Charles A., Lt Gen, Joint Force Air Component Commander, DESERT STORM, as quoted in “Joint Warfare of the Armed Forces of the United States”, JCS Jt Pub 1, 10 Jan 95, page A-4

CHAPTER 3

MTW - A SIMPLE DEFINITION WITH COMPLEX INFLUENCES

*"Everything in war is simple,
but the simplest thing is difficult."*

Clausewitz

Given the constraints of current warfare paradigms, and the promise of Joint and Service future visions, there is merit to exploring the potential character of future major theater warfare and the paths our U.S. military could take to prepare for such engagements. Fundamental to understanding that character is a developing a broader, simpler definition for major theater war (MTW) outside of the canonical two-war scenario, and assessing three significant influences that complicate its conduct.

MAJOR THEATER WAR REDEFINED

The classic MTW capability construct is gravely in need of revision. It has unfortunately bound us to thinking that an MTW is either a North Korean invasion of South Korea or an Iraqi invasion of Saudi Arabia. When often used in a generic sense, an MTW seems to logically translate to any scenario where a large, conventional enemy force invades neighboring territory. Unfortunately, other than Korea or Southwest Asia, there are few areas on the globe where we could predict a similar scenario and accurately use the generic MTW application. Consequently we are left with an inadequate definition that does not apply to the varied possibilities the future security environment could unveil. Still, the ever-prevalent use of the MTW acronym to describe a generic MTW elicits any number of possible interpretations. Likewise, the MTW buzzword has become "fuzzy" in the past decade. One only has to look as far back as the Gulf War to realize that history continues to repeatedly demonstrate that the conduct of modern conventional warfare is not solely constrained to being defined by MTW constructs alone. In the latter part of the 20th century, U.S. military forces have been employed in conventional combat to varying degrees from raids, to strikes, to intense combat operations in Kosovo. Often fitting into the rigid, classic definitions of small-scale contingencies (SSCs), these past and future operations have and could lead to applications of force equivalent to those we apply in an MTW.

Perhaps we cannot predict with reasonable certainty the character of the next war. In the light of the expected future security environment, we have no clear threats opposing our conventional superiority. We face a situation where our armed forces do not know against whom they will fight, when they will fight, and even where

they will fight.¹³⁴ Certainly, our forces must be prepared for the two specific MTWs in Korea and Southwest Asia as long as those threats persist. The question remains, would another MTW fight be of the same identical character? More than likely it will not, making the current geo-centric MTW label somewhat inadequate. We are now at the point where, with only the inappropriate MTW moniker to describe any large-scale war, we find that one MTW does not necessarily equal another.

However, in order to characterize future major theater war, we should first acknowledge that the MTW acronym does have some useful degree of universal acceptance and recognition. As discussed earlier, the MRC/MTW capability construct insidiously evolved into what appeared to be generally accepted definition for a high intensity/high-end warfight. However, further analysis reveals that we really don't know what each other means when the MTW term is used. Is one speaking of a Korean war? Or perhaps an Iraqi battle in the desert? Or is it perhaps something else? What we need is to somehow break away from the restricting canonical MTW construct and adequately re-define what we really mean in simple, flexible terms--not too broad, yet not too narrow.

One choice is come up with a new acronym for high intensity war and divest of the term MTW. True, that would allow a fresh, new definition, and open opportunities to think differently about the subject. However, one could easily criticize it as a new acronym for the same old warfighting concept—labeling it as sort of an “old wine in new bottles approach”. Another choice would be to retain the widely recognized and used (albeit often misused) acronym MTW, yet accurately and adequately re-define it. Such a definition would have to be adaptable so that we understand it involves large-scale high-intensity/high-end warfare, yet similarly understand it is not confined to a particular geographic region or specific scenario. Convincingly argued, redefining a widely used and recognizable term (essentially providing a definition where there never was one in the first place) could yield great benefit, outweighing the challenge of broadly communicating the message. In that regard, this study chooses the latter option, and proposes the following definition:

MAJOR THEATER WAR (MTW) – US military operations to deter and defeat large-scale aggression by a state or coalition that threatens an ally or the stability of a region. Involves joint and potentially combined military

¹³⁴ Murray, Williamson, Introductory comments made in “Future War”, by Scales, Robert H., Maj Gen, USA, May 99

operations that project, apply, and sustain substantial US combat and combat support forces for high-intensity/high-end conflict

This new MTW definition is no longer restricted to specific, cross-border land confrontations as the former canonical capability construct implied. It allows us to postulate that enemy aggression is not limited to use of only conventional land-armored forces, as our assessment of future threats includes the possibility the enemy will use asymmetric approaches to include WMD, theater ballistic missiles, and information warfare. Consequently, our defense may or may not be limited to symmetric or conventional response.

A key part of this definition is determining what makes up “substantial US combat and combat support forces” for any given MTW. With the canonical cases of the past, this was relatively easy—forces were specifically apportioned for the MTW in Korea and the MTW in Southwest Asia. However, given that other scenarios may now fit this broader MTW definition, the unanswered question remains as to what are the appropriate numbers and types of committed forces required? When does the amount of military forces committed turn any given conflict into an MTW? For example, ALLIED FORCE was by official Defense Planning Guidance (DPG) definition a show of force SSC. However, use of aerospace assets in this show of force exceeded that of a canonical MTW level. Indeed, there is little daylight between some high-end SSCs committing large amounts of forces, and what we would classically define as a traditional MTW. Different MTW scenarios may challenge different elements of the joint force. All the more reason for a new broader definition.

The broader MTW definition also allows for the application of key variables not possible in the previously inflexible, canonical construct. Most recognizably, objectives for war termination and endstate can now differ between each case. Some MTWs may require territorial occupation, “decapitation” of the leadership, and absolute regime change of the adversary. Other MTWs may only focus on restoring the original borders and political conditions before the onset of hostilities (e.g. “status quo ante”). Still others may solely focus on rolling back adversary offensive capability. Similarly, notions of fighting and winning may entail the classic phased approach described in the OPLANS – Halt, Build, Counteroffensive, and Post-Conflict Stability. However, other MTWs may only require a Halt, Build, Counteroffensive phase, while still others may only need a Halt and Strike option. In fact, classic OPLAN definitions of Halt, Build, and Counteroffensive may not even apply in certain MTW scenarios. For example, in a “Distant Straits” scenario (see Chap 4) there may be no invading land force to halt. Instead, the halt may entail efforts to terminate enemy airborne, ballistic missile, and amphibious attacks. Likewise, there may be no

classic landmass to build forces on for the counteroffensive. The build may entail the deployment to regional bases and via global power projection (air and naval). Similarly, the counteroffensive may never be a land invasion. Instead, it could entail long range, deep precision strike from air, land, and sea based platforms, seeking to gain strategic capitulation from the adversary's leadership.

Other variables can be applied to this new definition of an MTW, such as size and complexity of forces, warning time, extent and timing of mobilization, separation time (amount of overlap), and acceptable levels of risk with regard to swinging forces to a second MTW, or perhaps even a third MTW. However, these areas are beyond the classification level of this paper. Still, if you accept the new MTW definition as adequate for discussing high-intensity/high-end war, then we have a solid foundation by which to assess three major MTW influences.

INFLUENCES ON FUTURE MTWs

Future MTWs will be critically influenced by three complex characteristics—*Increased Participation with Coalition and Allied Forces*, *Potential for Limited Access*, and *America's Tolerance for Casualties*. These are increasingly significant, complicating factors forcing us to reshape our view of an MTW as well integral to our planning and analysis.

Influence #1- Increased Participation With Coalition And Allied Forces

We will not operate unilaterally as "the Lone Ranger" in any future MTW scenario. Certainly, the United States must retain the will and capability to unilaterally respond with combat force when it's national vital interests are at state—however that would clearly be the extreme case. Participation with coalition and allied partners will almost certainly occur when we engage in future MTWs—as evidenced by DESERT STORM and ALLIED FORCE.¹³⁵ These recent conflicts hold invaluable lessons in the art of combined warfare, being the two most recent and significant combined operations the U.S. has participated in since the Korean War.

Coalition and alliance warfare have both strikingly similar and contradictory characteristics, and we will have understand these if we expect to win, being that our role will be both a leader and a partner on any combined team. Most certainly, the union formed by coalition and alliance teams will fundamentally include those countries being defended as well as bound by treaty. However, it is reasonable to expect that other international powers (such as the United Kingdom and Germany, for example) may elect to participate regardless of any association with any

¹³⁵ Note: Although officially classified as an SSC, the MTW level application of joint aerospace assets during ALLIED FORCE offers a justifiable opportunity to compare the operation with MTW influences.

treaty. Fighting coalition/alliance warfare requires an understanding of the nature of these formations in terms of the effectiveness their enhanced synergy brings, as well as the complexities their inherent structure produces. We will need to recognize the differing capabilities and limitations each partner brings to the fight, as universal comparisons cannot be generic. For example, in a North East Asia Korean scenario, Republic of Korea forces offer highly capable air and land forces. The same can be said for a China-Taiwan scenario, where Taiwanese Air Forces present a formidable deterrent. Conversely, the chemical/biological defense capabilities of many potential coalition/alliance partners tends to fall well below U.S. standards. The same could be said for the time required for coalition/alliance nations to mobilize a substantial fighting force. How much the United States decides to consider the differing capabilities and limitations found in any coalition or alliance partner will vary. At best, most US military thought only conservatively relies on these enhancing capabilities.

Coalitions

Coalition operations have several dimensions. Critically important is understanding that they take considerable time to put together. The culturally complex inter-national arena often requires tedious and sensitive state-to-state diplomatic efforts to build a cohesive team, often one combined of national entities with often diverse motivations and areas of interest. Fundamentally, this takes time...witness the months of effort it took to put DESERT STORM's coalition of 16 nations together. If an MTW conflict erupts requiring rapid response, there may be insufficient time to form an adequately unified coalition to prosecute the war. If time permits, the complementary capabilities of the coalition's combined members provide great advantages.

One drawback of coalitions is that the limitations of one coalition partner or another can serve as a vulnerability to the team as a whole. This could be manifested in terms of interoperability limitations (equipment/tactics/doctrine)¹³⁶ or even as far as significant cultural differences on ways to fight. Also, requiring the

¹³⁶ Note: Coalition military forces in DESERT STORM operated with equipment built by both NATO and the former Soviet Union. This mix of equipment had its share of headaches, particularly in terms of often requiring separate logistical supply channels for unlike ammunition and spare parts. Likewise, much of the equipment from was not interoperable—specifically secure and anti-jam (HAVEQUICK) radios. Most strike operations were conducted in the clear to alleviate this difficulty, at the expense of security with time-consuming, tedious, old-fashioned code-word workarounds. Similarly, not all coalition forces had access to Mode IV Identification Friend or Foe (IFF) aircraft transponders, making beyond visual range combat identification difficult, particularly when French, Qatari, and Iraqi forces employed similar F-1 fighters. Coalition, Iraqi, and neutral Iranian forces operated similar surface to air missile (SAM) systems, such as Syrian SA-6s, Iraqi operated HAWKs (captured from Kuwait), and Iranian SA-2s further, causing combat identification challenges for SEAD operations. See discussion on situational awareness ambiguities in "MTTP for Anti-Radiation Missile Employment", FM 90-35 / FMFM 5-58 / NDC TACNOTE 3-01.41 / ACC-PACAF-USAFE PAM 10-750, Jun '95, page VII-1.

coalition to fight the "American way of war" may be totally foreign to a coalition partner. The effective prosecution of coalition objectives will have to consider that all elements of the combined force may not fully subjectively fight as efficiently as would a unilateral, single nation effort. US participation in any coalition MTW effort will have to fully consider this effect.

Coalitions are normally driven by the requirement to strengthen international political power rather than military power. However, as members of the coalition tend to be strengthened by political unification, that same unified political force is held hostage by any number of military vulnerabilities presented by a single member. Should a military weakness be exploited, the coalition could begin to lose strength. For example, an adversary chemical/biological attack against an unprepared coalition partner could result in that member withdrawing significant political support in favor of self-preservation. With the loss of that partner, the coalition's political power could easily begin to fall apart.

Coalition operations also have the particular nuance that they are temporary—formed only for an express purpose. DESERT STORM was executed by a vast coalition of nations formed for a specific purpose—removal of Saddam Hussein's Iraqi forces from Kuwait. These coalition operations were tenuous in that it took extensive diplomatic efforts, not to mention a lot of time, to unify nation state policies and wills toward a combined goal, with the potential for application of significant military force, if diplomatic efforts were to fail. Many of the coalition partners were previously bound together in parallel alliances (both diplomatic, military, and economic) which assisted heads of state in the ease of forming the coalition force with a singular goal. For example, most Arab states in the region were members of the Gulf Cooperation Council of Arab States (GCC), many others were members of NATO, and most all were in the United Nations. Coalitions such as the one in DESERT STORM are balanced formations subject to lesser commitment than long standing alliances. Thus, there exists the risk of the coalition dissolving if there is any deviation from the agreed objective, war aims, or basis for conflict termination.

Gen Colin Powell was keenly aware of this, and advised President Bush to direct termination of combat operations during DESERT STORM once Iraqi Troops began fleeing Kuwait on 26 Feb 91. Recall the most vivid image of this retreat was the Basra "Highway of Death", choked with fleeing soldiers and littered with over 1500 destroyed military and civilian vehicles. With 27 of 42 Iraqi divisions destroyed or overrun, and mounting prisoners approaching 70,000, the Coalition military forces had achieved the objective of the United Nations Security

Resolution to oust Saddam from its neighbor. The Iraqi war machine was defeated and the "Mother of all Retreats" was underway. The strategic objective had been met, and the coalition had dealt the Iraqi forces a crushing defeat leaving them in numbers less than half of what they had been. "Kuwait is liberated", announced President George Bush at 9:02 P.M, 27 Feb 91.¹³⁷

Alliances

Alliances have the benefits a more permanent structure brings. Recent experiences in ALLIED FORCE point out the unique and telling aspects inherent to alliance operations. ALLIED FORCE was conducted by a well-established NATO alliance (with some coalition partners) with over 50 years of experience working as a team against the former Warsaw Pact. For the most part, NATO military forces had similar compatible equipment, and generally well established command structures (as opposed to typical coalition forces and operations). ALLIED FORCE could not have been conducted without the alliance and without the infrastructure, transit and basing access, host-nation force contributions, and most importantly, political and diplomatic support provided by the allies.¹³⁸

But significant lessons were learned during ALLIED FORCE with regard to U.S. combat operations with allied forces in alliance operations. Sec Cohen and Gen Shelton's Kosovo After Action Review pointed out that the targeting process had to be redeveloped to prevent excessive political oversight from inhibiting the flexibility of military commanders. Additionally, NATO's established internal command relationships had never previously been used to plan and conduct sustained combat operations. Parallel U.S. and NATO C2 structures and systems complicated planning and unity of command. More significantly, there existed disparities between U.S. capabilities and those of NATO. For example, very few NATO allied aircraft could employ precision weapons in sufficient numbers, (or at all), forcing the United States to carry the burden of the preponderance of strike sorties in the beginning of the war. As in DESERT STORM, allies again lacked interoperable secure communications, which compromised operational security. Additionally, NATO allies had insufficient air mobility assets by which to deploy

¹³⁷ Note: Historians still debate the decision to terminate combat operations as opposed to widening U.S. war efforts to seize Baghdad and drive Saddam Hussein from power. Many argue the coalition would surely have dissolved, taking with it the depth of the extensive regional logistical support to U.S. forces, if the objectives had expanded to this aim, further than originally agreed. Gen Powell stated in his memoirs-- "What tends to be forgotten is that while the United States led the way, we were heading an *international* coalition carrying out a clearly defined UN mission. That mission had been accomplished." See Powell, Colin, Gen (Ret), former CJCS, "My American Journey", 1995, page 510

¹³⁸ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, "Joint Statement On The Kosovo After Action Review", 14 Oct 99

and lead KFOR ground forces beyond those already in theater. These problems notwithstanding, Sec Cohen defined ALLIED FORCE as a “decisive victory”, by which the NATO alliance “did in fact stop the killing; we did in fact force Milosevic’s forces out of Kosovo; we did in fact have a return of the refugees”¹³⁹ However, he emphasized that in order for U.S. and NATO forces to meet future warfighting challenges effectively, NATO must successfully implement the Defense Capabilities Initiative (DCI), adopted by NATO in Apr 99.¹⁴⁰ DCI will enhance NATO allied military capabilities in five key areas: *deployability/mobility, sustainability/logistics, effective engagement, survivability of forces/infrastructure, and C2 and information systems*. DCI can also serve as a template, in broader terms, for U.S. forces to examine other alliances in other theaters. This will significantly help, such that when alliance warfare begins, U.S. forces can “plug-in” with allied capabilities much like an American plug uses an adapter to operate with a foreign electrical socket.¹⁴¹ Maj Gen Scales, Commandant of the U.S. Army War Colleges, emphasizes that aside from technology, another area critical to enhancing coalition and alliance operations is recognizing the potential impediments of language, cultural differences, and national perspectives when operating as a combined team. Compensating for such impediments requires training select officers to function autonomously under great stress within a multinational environment, who are sensitive to national or subnational issues while skilled in building trust. Effective dealings with coalition/allied counterparts are an “antidote” to the fog and friction of coalition/alliance warfare.¹⁴²

Influence #2 - Potential for Limited Access

To fight an MTW, we can no longer assume U.S. forces will, to use a metaphor, “waltz down Main Street” and have unrestricted access to any theater. More than likely, we may have to negotiate with host nations for entry, or be prepared to fight our way in. Our forces will also have the ability to survive and operate despite continued adversary efforts to intimidate and dislodge them once “in-country”.

In response to the 1997 National Defense Panel Final Report, Secretary of Defense William Cohen stated “Our potential enemies will look to exploit our vulnerabilities through a range of asymmetric approaches that focus on denying us access to key regions and imposing large numbers of casualties early in the conflict.”¹⁴³ Chief of

¹³⁹ Cohen, William, SecDef, testimony to SASC on Lessons Learned on Kosovo, 14 Oct 99

¹⁴⁰ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, “Joint Statement On The Kosovo After Action Review”, 14 Oct 99

¹⁴¹ Kennedy, Kevin, Col, Director, USAF Checkmate Division, Interview with the author, 13 Oct 99

¹⁴² Scales, Robert H, Maj Gen, USA, “Future Warfare”, May 1999, pages 190-191, 198

¹⁴³ Cohen, William, Secretary of Defense, “SecDef Response to the National Defense Panel Final Report” 15 Dec 97

Naval Operations, Adm Jay Johnson similarly stated that countering a potential adversary's area-denial efforts "will become the single most crucial element in projecting and sustaining U.S. military power where it is needed."¹⁴⁴ With adversary WMD and long range precision strike (LRPS) capabilities growing as an asymmetric threat, combined with U.S. military forward basing significantly cut since the end of the Cold War,¹⁴⁵ U.S. forces are faced with evaluating the prospect of whether or not we will continue to have the traditional luxury of access for the conduct of military operations. Adversaries may attempt to undermine U.S. presence in peacetime, deter our actions in crisis, and wage military operations in wartime.¹⁴⁶ However, its important to first understand what is meant by access. Access requires two interwoven characteristics: political and physical. Adversaries seeking to deny access will use various methods to deter, coerce, and inhibit deployment/invasion—seeking to hamper and prohibit U.S. military presence¹⁴⁷.

Political Access

Political access is simply when a host nation allows U. S. forces the *timely* use of their sovereign territory (air, sea, and/or land) for the conduct or support of combat operations. This includes adequate and secure deep water ports, airfields, overflight rights, supply points, command and control facilities, and areas to muster land forces once they have arrived in theater. The key element is the timeliness of gaining such access. Extensive political delays to gain required access may result in thwarting U.S. initiative to gain rapid, quick advantage and reduced ability to coerce and influence enemy force actions. If U.S. forces are not equipped or flexible enough to employ long range assets or forces not reliant on physical presence, the advantage and ultimate victory may be lost to the adversary. Consequently, delayed or late access could be in many ways the same as never having been granted access at all.

Standing treaties and agreements set the stage for those locations the U. S. and its partners have already agreed to share. Normally, these exist in parallel with long standing alliances, such as NATO. Regardless, being a part of such an alliance is never a guarantee. As an example, France denied overflight rights to Air Force fighter and

¹⁴⁴ Johnson, J, Adm, Chief of Naval Operations, "Anytime, Anywhere", Proceedings, Nov '97

¹⁴⁵ U. S. overseas bases and ports have declined by 75%, from a high of 115 in 1956 to 27 in 1995. Source - Mahnken, T, "Deny U.S. Access?", Proceedings, Sept 98 and Office of Naval Intelligence, "Challenges to Naval Expeditionary Warfare", ONI Report, 97

¹⁴⁶ Mahnken, T, "Deny U.S. Access", Proceedings, Sep 98

¹⁴⁷ Further detailed study on anti-access tactics, benefits, and risks is found in "The Revenge of the Melians", McKenzie, Frank K, Lt Col USMC, NDU McNair Paper, May 2000

tanker aircraft launching from England during the 1986 U.S. air raid on Libya. Air Force strike packages were forced to circumvent France's airspace (Naval portions of the joint strike force were tactically prepositioned on carriers in the Mediterranean Sea). Although this considerably lengthened the sortie duration and fuel requirements for part of the joint strike force, the mission was still successfully completed. Regardless, it does serve as one such example where U.S. forces had to adapt to political access restrictions of denied overflight by a neutral nation. Conversely, recent history reflects that during ALLIED FORCE, U. S. forces quickly gained political access to operate from 23 airbases throughout 8 NATO member countries in Europe--England, Germany, France, Spain, Turkey, and Italy. By matter of comparison, the U.S. access to these 23 European airbases well exceeded the total number of U.S. operational airbases in Europe during the height of the Cold War. It is important to recognize that of NATO's 19 member nations, 13 provided aircraft to participate in the operation, greatly decreasing total U.S. needs for political access due to alliance member participation. It was the strength of the combined NATO alliance that assured the political access U.S. forces needed. It is doubtful the U.S. will conduct future high-end combat operations (MTW or SSC) unilaterally, and therefore political access will more than likely be available as a result of alliance/coalition objectives and combined unity. In the case of ALLIED FORCE (deemed by some the most significant alliance led operation in history) political access was dependent on alliance unity. In DESERT STORM, the coalition agreement supported much of the same type of access across Southwest Asia and throughout the Persian Gulf. Any politically granted access will remain alliance and coalition dependent, relying critically on continued multi-partisan support for the operation at hand.

Speculation often ensues as to whether or not the U.S. will always easily acquire and retain political access in the light of a perceived dynamic and highly changing international environment. Naysayers warn of fickle nations who may not support U. S. deployments, even under the peer pressure of the political alliances these nations share with their neighbors. However, as a point of reference, it is a fact that only 7% of USAF contingency deployments in the 1990s experienced any type of access complications, and less than 1% of USAF contingency deployments experienced host nation access denial.¹⁴⁸

If the political environment is such that access is denied due to a potential host nation being seriously blackmailed by the adversary, then the problem takes on a whole new light. There is precedence where an adversary

¹⁴⁸ HQ USAF/XPXQ Deployment Statistics, 4 Nov 99

has attempted to do this. Saddam Hussein has tried to deny U.S. access to basing in the region by verbally attacking and criticizing neighboring states that have hosted U.S. or allied forces. Fortunately, this tactic has boomeranged, and threats and insults against Iraq's neighbors have caused them to welcome the presence of the United States.¹⁴⁹ However, that does not mean that threats could not escalate, nor take a more serious turn if use of WMD was proposed. Take for example, a notional scenario involving U.S. defense of the Taiwan Straits from incursions from the People's Republic of China. What would happen if the PRC threatened Japan and Taiwan with WMD missile attacks at the first landing of a U.S. military aircraft on their sovereign territory? At what point does the allied cost-benefit calculation become too much for the host nation to bear? If politically denied access, how then would the U.S. regionally project sufficient military power in accordance with the task at hand?

Political access can also be conditional, or vary in degrees. For example, Greece abstained from participation with its credible force of SEAD capable F-16CJs, and prevented NATO aircraft from using its airbases to launch strikes as well. However, its deep-water port of Thessaloniki was readied for the potential staging of large-scale land invasion forces, and continues to be a key logistical port in post-conflict operations. Similarly, one could postulate that a host nation could limit the type of access—such as allowing airlift platforms vice attack platforms on its airfields—to present the appearance of a less threatening or more neutral participant in a given conflict. How long that support remains is another important issue, as it directly translates into how long political access will remain. Waning host-nation support could put access at risk. Much was feared about the NATO alliance losing its resolve during ALLIED FORCE and the potential of certain individual countries reversing their commitments to allow combat and combat support operations to continue from their bases. On the surface, it was certainly plausible; yet more often worried about and debated that actually experienced. One nation unilaterally pulling support certainly would have had to do so in the face of their peer nations, breaking the solidarity and protection the alliance preserves. Changing one's mind is certainly plausible, especially as war aims evolve, or costs exceed original expectations. Yet in the case of ALLIED FORCE, even fledgling NATO nations of Poland and Hungary unhesitatingly provided full access to the war—which is subtly ironic when one realizes these former communist nations would have been supporting Serbia (as Yugoslavia) less than a decade earlier. Apparently, these former political ties had little effect.

¹⁴⁹ Comments summarized from Daniel Byman, Policy Analyst, RAND Corp, Washington Institute Policy Forum "Air Power and U.S. Policy Toward Iraq", 17 Nov 99

Finally, there are few, if any instances where political access for U. S. forces has ever been revoked. As an example, the execution of the EUCOM OPERATION NORTHERN WATCH No Fly Zones (also known as Air Exclusion Zones), joint operations have been unhampered by any political access limitations or waning host-nation support since their inception over 8 years ago.

Physical Access

Physical access is an entirely different animal. Either geography or the adversary threat affects it. In the first case, U.S. forces may need to project power into where no comparable base structure exists.¹⁵⁰ On-going efforts by the Services to improve their bare base capability, expeditionary mindsets, forced entry capabilities, and “minimal footprint” reachback operations will serve to minimize the effect. Adequate weight-bearing runways, ample ramp space, room for a tent city, and access to fuel and water are key considerations. But situations of denied access due to the threat are most probable. Faced with an adversary that has LRPS capability with ballistic and cruise missile technology, physical access comes into significant question. Approximately 38 nations in the world have ballistic missile capability, and 27 countries are believed to have one or more types of weapons of mass destruction.¹⁵¹ China, India, and Russia are believed to be experimenting with a moving target capability. Essentially, ballistic missiles are hot items. Iran recently sold missiles to the Congo, South Korea is competing with North Korea in a mini-arms race, and China built what appears to be missile facility a mere 300 nm from Taiwan. Yet whether or not these countries will similarly develop or attain enhanced technology to collect, fuse, distribute, and act upon accurate, real time information remains an important question. Is the ballistic missile threat of our adversary so advanced that their missiles have a 2000 nm threat radius, mid course guidance to track moving targets, and operate under an intelligence / command and control structure similar to the U.S. own National Reconnaissance Organization? Probably not. What does exist however is a respectable fixed target capability that if combined with nuclear, biological, or chemical warheads, could be a significant threat that cannot be easily brushed aside.

From a conventional perspective (warheads without WMD), ballistic missiles have little tactical effect, but present a psychological effect much like the German V-1 and V-2 rockets used against England in WW II. With little

¹⁵⁰ Krepinevich, A, “The Future of Tactical Aviation: a Strategic Perspective”, testimony before the Senate Armed Services AirLand Subcommittee, 10 Mar 99

¹⁵¹ Glaes, David J, “Worldwide Weapons of Mass Destruction/Ballistic Missile Data Base”, SAIC, 31 Jan 97. Also, see discussion on WMD Delivery System types in “U.S. Military Strategy in the 21st Century” by Blechman, Barry and Nagy, Paul, 1997, pages 104-106.

ability for complex, highly accurate fixed targeting, ballistic missile payloads are limited to the blast effects of a single, relatively small, unguided air dropped bomb. If the missiles have been modified for extended range, then the conventional payloads have been even further reduced. For example, former Soviet R-17E Scud missiles traditionally carry a 2,172 lb. warhead, and range from 187 nm (Scud B versions) to 300 nm (Scud C versions). Iraqi modifications to these missiles into longer range Al Hussein, Al Abbas, and Al Hijarah versions significantly reduced typical warhead sizes to 418 lbs.—an almost 80% reduction in conventional explosive capability, with no additional guidance modifications.¹⁵² Any additional high accuracy / high-resolution guidance packages will further reduce explosive payloads in a trade-off for range. Yet all things considered, a lucky conventional shot could proverbially ruin one's day. Take for example the Iraqi Scud missile that missed a pier at the Saudi Port of Jubayl during DESERT STORM. The pier was stacked with over 5000 tons of 155-mm artillery shells at the time.¹⁵³ Imagine the chaotic destruction had the SCUD scored a direct hit. More disturbingly, if saturation missile attacks are conducted, the results "could make it extremely costly to project U.S. forces into a disputed theater."¹⁵⁴

If ballistic missiles are armed with WMD, nuclear, chemical, and biological warheads, the balance dramatically shifts to the shooter's favor. The lowly SCUD missile becomes a far more militarily effective weapon when armed with a WMD payload rather than high explosives, and when fired at a large area target of operational significance.¹⁵⁵ It is true that chemical attacks are ones for which U. S. military forces are extensively well equipped and well trained. They are routinely evaluated on their ability to conduct combat operations following a chemical attack. Commanders are faced with donning protective equipment and decontaminate, relocate, or fight continuously in the contaminated environment. However, regardless of the choice, it is undeniable that activity will be at an extremely reduced rate (estimated 50% to 80% less¹⁵⁶) until the chemical fully evaporates (usually 25-43 hours, temperature and wind dependent). Full tempo combat operations could resume after that period, unless successive missile attacks are shrewdly launched at regular intervals to continuously suppress normal military activity. Five to six missiles fired every 24 hours could conceivably shut down a base or port indefinitely, with a potential long term

¹⁵² Bolger, Daniel P., Lt Col, US Army, "Death Ground-Today's American Infantry in Battle", page 162

¹⁵³ Mahnken, T, "Deny U.S. Access?", Proceedings, Sept 98

¹⁵⁴ Fogelman, R, Gen, former CSAF, extracted from an article by Bill Gertz, "The Air Force and Missile Defense", Air Force Magazine, Feb 96

¹⁵⁵ For an exceptionally detailed study on the effects of WMD ballistic missiles on ports and airfields, see Weaver, Greg and Glaes, David, "Inviting Disaster—How WMD Undermine U.S. Strategy for Projecting Military Power", 1997.

¹⁵⁶ Weaver and Glaes, page 3

effect of breaking U.S. will or provoking ire with a provoked "Pearl Harbor" reaction.

Additionally, one must consider the psychological effects of a chemical attack. Our Civilian Air Reserve Fleet (CRAF) support is ill suited to cope with operations into a chemical environment, and will probably refrain from any in country sorties to deliver troops and supplies. Similarly, host nation contractual laborer support, especially at seaports, would quickly dissolve, resulting in a debilitating loss to any port operation. Even if a minimal number of civilian workers became casualties in an initial chemical attack, the probable result would be the refusal of many surviving critical workers to remain at or return to their jobs.¹⁵⁷ Throughput at the port could virtually grind to a halt. Imagine the paranoia that would ensue among host nation civilian workers if, to use the colloquial expression, they were "slimed" by chemical agents. To the extreme, nuclear attacks are simple—they raise the bar even further to its highest limit, totally destroying a base or port, with a very high casualty rate (above an estimated 80%).¹⁵⁸

However, to be fair, there do exist opinions that no adversary would ever risk use of WMD—for many reasons. Some imply the threat of third party repercussions deters use, say for example should chemicals drift with the wind into neighboring territories aligned with the adversary. Biological toxins and chemicals don't know which side they are supposed to be on—typhus spread among your enemies has a way of coming back at you, as the Germans discovered in the Warsaw Ghetto.¹⁵⁹ Others state the mere volatility to handle the "bugs" or "slime" is too high a risk for the shooter to manage. Another view is that WMD would only be employed if plausible deniability could be guaranteed, lest the adversary incur an overwhelming retaliatory response in kind from the U.S. Regardless, anonymity would be very difficult to assure. But what if the adversary uses the WMD against a third-party nation, especially one of our allies? How would the U.S. then justify a nuclear response when our territory and forces have not been attacked? Fundamentally, the adversary's willingness to use WMD cannot be accurately predicted. Rogue states, by their nature, don't "play by the rules" nor uphold the same reservations against using WMD as we do. Regardless of the debate, the probability of adversary use of WMD, no matter how minute, carries such disproportionate effects that it is a threat we must respect—we cannot simply wish it away.

In our efforts to respect the WMD threat, we must also use caution in not exaggerating it either. It is

¹⁵⁷ Weaver and Glaes, page 24

¹⁵⁸ Ibid, page 49

¹⁵⁹ Ambrose, Stephen E, "Americans at War"-- War in the 21st Century, 1997, page 199

critically prudent to improve intelligence assessments to accurately determining how many ballistic missiles exist, and with what capability (especially nuclear and biological), to predict the actual, realistic threat. After DESERT STORM, Gen Schwarzkopf, CINCCENT explained "For two years, I had been guaranteed that they (Iraqi Scuds) did not have a chemical capability. The day the war started, their (the intelligence community) estimate shifted, and by one month later it was that they probably did have a chemical warhead on a Scud missile, and nothing had changed out there in the way of occurrences or events.... we went to the "definitely do not" to "maybe" to "do have" in a period of two months."¹⁶⁰

Physical threats to access also encompass sea-based sensor and mine barriers, anti-ship missiles, land based mortar and rocket attacks, and aerial attack. Our growing reliance upon prepositioned equipment serves as both a part solution and a possible risk to this type of physical access dilemma. As a solution, assets regionally placed outside anticipated ballistic missile threat rings will add survivability. Prepositioned equipment is located in Korea, Kuwait, and Qatar, as well as 34 "prepo-afloat" ships in the Indian and Pacific oceans.¹⁶¹ On the other hand, if located and targeted, these ships become a liability. Regional bases placed outside threat rings (such as Guam and Diego Garcia), but within reasonable distance to the theater, are other growing solutions. In addition, the Services are actively working on approaches to provide a multi-layered defense in depth, to include the Air Force's Airborne Laser, Navy's Aegis shipboard anti-missile system, and Army's ground based Theater High Altitude Area Defense (THAAD) missile defense program.

The bottom line to physical access is if we don't obtain it, we have two choices in the MTW fight. The first is to operate from the periphery at regional protected locations (using long range strike, airlift, or carriers) where we have the ability to attack enemy centers of gravity without exposing our center of gravity to high risk—in other words, relative impunity. The second would be to have the capability to force an entry into the adversary's environment and with the added requirement to protect our forces once within the adversary threat ring—in as sense "surviving access." If attacked, (which is most probable) we will have to decide if the reduced operational rates are acceptable in terms of the operational gain. Regardless of the approach, freedom from attack throughout the battlespace will be a primary focus—it's just that it will be more costly to attain and retain in the latter case than in the former. Joint experimentation efforts in long range strike, base/port defense, air supremacy, and forced entry

¹⁶⁰ Gordon, Michael R, and Trainor, B.E. Lt Gen USMC (Ret), "The General's War", 1995, p 522.

¹⁶¹ GAO Report, "Overseas Presence", 1998

operations will go a long way towards assessing the tradeoffs in how to minimize the physical access threat.

Undeniably, the traditional paradigm of continued, guaranteed access has significantly changed, yet to what degree will depend on each situation. Physically denied access is much more probable than one politically refused. Regardless, the U.S. military must cautiously respect the new challenges denied access may present, and is wise to adapt accordingly in its preparation for any MTW.

Influence #3 – America's Tolerance for Friendly Casualties

Much has been said about America's level of tolerance toward friendly casualties, leading to predictions as to whether or not it would significantly influence our nation's decision to engage in an MTW. With few veterans in either the political and civil sectors, it appears our American culture has become increasingly removed from its awareness of the risks of war. Additionally, historical precedents have been set which risk lulling Americans into the false illusion that wars are antiseptic and practically casualty free. In a sense, military operations have become victims of their own success. DESERT STORM brought home only a few hundred body bags, when it was predicted there would be thousands. During ALLIED FORCE, not a single pilot was lost despite over 10,000 strike sorties being flown amidst 700 surface to air missile firings. Gen Short, Commander, NATO Allied Air Forces Southern Europe (AFSOUTH), stated in testimony to the Senate he was very concerned that with the combined total combat losses of only two airplanes and no American lives, the belief will ensue that "airpower is a freebie, that you can do it and no one dies on our side".¹⁶² Has an "American arrogance" set in where our society expects painless, casualty-free warfare, all the time? And what if it doesn't occur—will that influence our involvement in any MTW? There exist what appear to be several competing schools of thought.

The first school says that as a whole, Americans will not tolerate casualties. Often cited is OPERATION RESTORE HOPE in Somalia, where after dead American soldiers were drug through the streets, support for the operation waned and political pressure forced U.S. withdrawal. An incensed American people seemed to say "That is not the way it should be—weren't we supposed to be feeding people over there?" Fast forward to Bosnia, where the nation was transfixed over the rescue of one *single* downed pilot, Capt. Scott O'Grady (compare this rescue to the non-chalance the country initially had for hundreds of downed flyers over North Vietnam). Similarly, during ALLIED FORCE, three soldiers were captured, and the nation attentively watched as Rev Jesse Jackson successfully

¹⁶² Short, Michael, Lt Gen, USAF, Commander NATO AFSOUTH, testimony to SASC on Lessons Learned in Kosovo, 21 Oct 99

negotiating for their safe return.

Another school of thought focuses on a study conducted by Duke University that concluded the general public is far more willing to tolerate combat losses than civilian policymakers or senior military officers.¹⁶³ 4900 Americans were polled from three groups: senior and rising military officers, influential civilian elite, and the general public. It summarily concluded that the general public is more willing than senior officers or the civilian elite to accept not just hundreds, but thousands of casualties. Example missions offered in the survey ranged from democratic stabilization in the Congo, defending Taiwan against China, and preventing Iraq from obtaining weapons of mass destruction.¹⁶⁴ Duke professors who ran the survey stated that "Troops are supposed to be willing to die so that civilians do not have to."¹⁶⁵ Critics of this survey explain the results rightly show that military professionals value human life more than the general public, and that the survey's authors negatively imply military professionals are wrong, afraid, or out of touch because they cherish life more than those who don't share their experience with war.¹⁶⁶

A third school focuses on casualty tolerance with respect to national vital interests. Its supporters explain that if post-Cold War experience is any indication, the American people will continue to be very concerned about casualties and skeptical about military interventions in regions where U.S. vital interests are not clearly at risk.¹⁶⁷ Those operations focusing only on important national interests should be commensurate with the costs and risks. Humanitarian and other interest pursuits should normally not use the U.S. military in the pursuit of stated objectives.¹⁶⁸ Regarding peacekeeping operations, an Associated Press poll showed only 49% of Americans support using U.S. troops overseas.¹⁶⁹ And what if a military operation not involving U.S. vital interests suddenly begins to incur unexpected and mounting casualties? A '94 RAND study indicates that the public would support an escalation

¹⁶³ "How Many Deaths Are Acceptable? A Surprising Answer", Washington Post, 7 Nov 99—reporting on the Duke University Triangle Institute for Security Studies (TISS) Casualty Aversion Survey conducted Sep 98-Jun 99

¹⁶⁴ Duke University TISS Casualty Aversion Survey Sep 98-Jun 99 results

¹⁶⁵ Feaver, Peter and Gelpi, Christopher, "How Many Deaths Are Acceptable? A Surprising Answer", Washington Post, 7 Nov 99—Duke University Triangle Institute for Security Studies (TISS) Casualty Aversion Survey conducted Sep 98-Jun 99

¹⁶⁶ Hallion, Richard P, USAF Chief Historian, "How Many Deaths?", Washington Post, 15 Nov 99

¹⁶⁷ Blechman, Barry M. and Nagy, Paul N., "U.S. Military Strategy in the 21st Century", 1997, page 88

¹⁶⁸ Cohen, William S, Sec of Defense, "Report to Congress on U.S. Military Involvement in Major SSCs Since the Persian Gulf War", March 1999, page 2-3

¹⁶⁹ Associated Press Poll, conducted by International Communications Research, 17-24 Sep 99, as reported in "Americans Appreciate U.S. Military", Las Vegas Review-Journal, 18 Oct 99

of the conflict and the use of any measures considered necessary to bring about victory.¹⁷⁰ Fundamentally, this school defends that the American public would support combat operations placing their sons and daughters in harm's way only when warfare involves the most vital of national interests—those of broad, overriding importance to the survival, safety, and vitality of the nation. Properly justified, explained, and well thought out, the American people will support and understand those risks.

It is hard to define any one “right way” to think about American casualty tolerance and its possible effect on an MTW. More than likely, key elements of each school of thought will always play to some degree. Dr Eliot Cohen explains that often there are “many and subtle reasons” a military would be unwilling to take losses in routine military operations that were common in the past, because “a single death in combat looks like a lapse in military leadership...several hundred are a catastrophe.”¹⁷¹ Certainly, we must become more aware that the enemy may focus on our own people's opinion as a center of gravity, exploiting the phenomenon of casualty aversion so influential in U.S. political and military thinking.¹⁷² Also we must remind ourselves that we are not invincible and that war involves incredible violence, destruction, and loss of life. Recognizably, some have emphasized that since DESERT STORM, our leaders have chosen to pursue successful strategies (primarily involving aerospace power) that minimized casualties as a result.¹⁷³ Similarly, there are others who emphasize that future operations will always require the judicious and appropriate use of land forces to “close with the enemy”¹⁷⁴. It seems as though both opinions can remain correct, as long as the primary objective in any MTW should always be to rapidly coerce, influence, and destroy the adversary while operationally minimizing risk of friendly casualties.

CONCLUSION

Understandably, the broader definition of an MTW makes sense. There are other scenarios beyond the canonical Southwest Asia and Northeast Asia possibilities. Many variables effect the notions of what the major theater warfight will entail. Likewise, the warfight in these scenarios is significantly influenced as well—inseparable from coalition/alliance participation, inhibited by threats of potential denied access, and unable to ignore the will of the Nation which sends its sons and daughters in harm's way.

¹⁷⁰ Schwarz, Benjamin C., “Casualties: Public Opinion and U.S. Military Intervention”, RAND, Santa Monica, 1994

¹⁷¹ Cohen, Eliot A, “War: At Arms”, National Review, January 24, 2000

¹⁷² Dunlap, Charles Jr, “JV 2010, A Red Team Assessment”, Joint Forces Quarterly, Autumn-Winter 1997-1998

¹⁷³ Hallion, Richard P, USAF Chief Historian, “How Many Deaths?”, Washington Post, 15 Nov 99

¹⁷⁴ Armitage, Richard, Ambassador, IFPA Conference on Strategic Responsiveness, 3 Nov 99. Full text: “The Air Force can destroy the enemy...the Navy can destroy the enemy, but the Infantry closes with the enemy”

CHAPTER 4

POSSIBLE MTW ARCHETYPAL SCENARIOS

*"The ability to gain victory
by changing and adapting according to opponents
is called genius."*

Liu Ji

To be certain, there is *no* certainty in the future. Although we can understand what influences the nature of the conflict, we cannot predict future an MTW will follow a predetermined script. In his book *Winning the Next War*, Harvard University author Stephen Rosen succinctly states his view that "A strategy that would prepare military innovations for this new world has to focus on the *management of uncertainty*, rather than on the construction of new capabilities tailored to predictions of what future wars would look like. It would be a mistake to construct a single scenario of a war with any of the new powers and then build new capabilities based on that scenario".¹⁷⁵ Michael Mandelbaum, Foreign Policy Professor at Johns Hopkins University, adds that modern war could also be further affected by "unknown-unknowns—things about which there is not merely uncertainty but a complete lack of awareness."¹⁷⁶

Regardless, in this environment of uncertainty and unknowns, there is none less significant value, if not a definite need, to propose a possible *range* of scenarios by which to view the future. Simply defined, scenarios have a heuristic orientation, and thus do not need to demonstrate an accuracy for prediction.¹⁷⁷ According to Andrew Krepenivich, Director CSBA, what is really important is not so much the predicting the future, but understanding it better than our potential adversaries, so as to be "more right" or "less wrong", and to be able to adapt more quickly. Scenarios can be valuable tool to help accelerate the process of thinking about and preparing for the future, while "defrosting" restrictive conventional wisdom.¹⁷⁸

Consequently, the following realistic range of possible scenarios will provide valuable insight and give a richer basis to view the character of future MTWs. They are representative (though not exhaustive) and do not

¹⁷⁵ Rosen, Stephen, "Winning the Next War", Cornell University Press, 1991, pages 259-260

¹⁷⁶ Mandelbaum, Michael, "Is Major War Obsolete?", *Survival*, Winter 1998-1999.

¹⁷⁷ Tangredi, Sam, CAPT, USN, "All Possible Wars", NDU Whitepaper, Feb 2000

¹⁷⁸ Krepenivich, Andrew F., "The Conflict Environment of 2016: A Scenario-Based Approach", CSBA, Oct 1996

necessarily incorporate any one single extreme.¹⁷⁹ These brief scenarios are also generic and meant to be taken for face value in the context of their character. Specific reference to any geopolitical situation is secondary in importance—, as no extensive assessment on the future security environment has been done beyond a logical, plausible, and realistic probability that these few scenarios could possibly occur. They are presented because they fit our new definition of MTW—US military operations to deter and defeat large-scale aggression by a state or coalition that threatens an ally or the stability of a region.

LARGE-SCALE CROSS BORDER INVASION

This scenario is the classic “baseline” case by which the two MTW capability construct has evolved. Well known to most, it involves a surprise large-scale invasion of conventional adversary forces and weapons, mostly armored, in a run across a neighboring border to secure territory and treasure. Specifically identified as occurring on either the Korean Peninsula or across the Iraqi - Kuwaiti - Saudi Arabian border, this scenario centers on force on force confrontation, where U.S. forces are put on the defensive and forced to “push the envelope” in a MTW in a typical DESERT STORM-like fashion. Terrain is conducive to the use of conventional land, sea, and air forces. Protection of the South Korean Peninsula remains a strategic imperative and U.S. national vital interest to retain stability in Asia. The Persian Gulf remains a “strategic prize”, as Saudi Arabian oil production and exportation is the world’s largest--the loss of which would create problems of grave proportions and trigger international intervention.¹⁸⁰ This scenario does not necessarily assume that both regions would embroil in conflict in overlapping timeframes. Other possible candidates for a large-scale, cross border invasion scenario include a Russian invasion of the resource rich Ukraine,¹⁸¹ or regional adversary efforts (either Iran, China, or Russia) to seize the oil producing region of the Caspian Basin (often considered the world’s third largest oil reserve behind the Persian Gulf and Siberia).¹⁸² Cross-border invasions could also lend themselves to the concept of “irredentism”, where perceived mismatches between borders and populations result in a state seeking to incorporate a group.¹⁸³

¹⁷⁹ There are scenarios which argue that instead of a military battle between political systems and ideologies, a financial battle between economic systems and markets will occur. For one example, see “The Next Cold War? - American Alternatives for the 21st Century” Hanson, James, Praeger Publishing, 1996

¹⁸⁰ Kemp, Geoffrey, “The Persian Gulf Remains the Strategic Prize”, *Survival*, Winter 1998/1999

¹⁸¹ Krepenivich, Andrew F., “The Conflict Environment of 2016: A Scenario-Based Approach”, CSBA, Oct 1996

¹⁸² For alternative views on the Caspian Sea Basin scenario, see “U.S. Strategy for the Caspian Sea Basin” by Burke, Adrian, Maj, USMC, *Strategic Review*, Fall 1999, and “The Myth of the Caspian ‘Great Game’: The Real Geopolitics of Energy”, by Jaffee, Amy and Manning, Richard, *Survival*, Winter 1998-1999.

¹⁸³ Mandelbaum, Michael, “Is Major War Obsolete?”, *Survival*, Winter 1998-1999.

Scenario excursions depart from the conventional aspects of this classic scenario to add the extensive use of WMD and other asymmetric means. A possible southwest Asia variation would envision seaside Saudi Arabian ports preemptively attacked with chemical Iraqi Scud ballistic missiles, posing significant physical, as well as political access issues for land forces. Likewise, US bases in Kuwait (to include forces at the airfields of Al Jaber and Al Salem) would be almost immediately shutdown with chemical and possibly biological agents. US forces would be forced to operate from regional bases throughout the Arabian Gulf, relying heavily on long-range strike assets (both carrier and land based) to halt an Iraqi land invasion. Conceivably, Iraq could also reveal extensive upgrades to its integrated air defense systems (IADS), revealing the presence of Russian supplied highly accurate, long range SA-10, 12, and 20 SAM systems to dominate the airspace. Such systems would extensively task US SEAD and Stealth assets, focusing primary efforts to secure aerospace superiority against this deadly threat before any follow-on ISR and airlift assets could safely enter into the theater. All the while, Iraqi armored columns would race south to secure Saudi oil fields, uninhibited by significant US land forces (still constrained by the effects of chemical and biological attacks at the ports), and minimally effected by airborne anti-armor attacks due to heavy-double digit SAM protection. In all fairness, there are schools of thought that would assess the Iraqi version of this scenario as less a possibility today than perhaps a decade ago. This is due in part to the significant deterrent effect current in theater US forces present, enhanced ISR and precision-attack capabilities now available to the theater CINC, and reduced Republican Guard force capability.

A similar excursion exists in the Korean version of the cross border invasion scenario proposed by former Secretary of Defense Caspar Weinberger and Peter Schweizer in their book *"The Next War"*. In their example, a large-scale cross border invasion is augmented by asymmetric attacks, use of WMD, and entry into the conflict by a third party regional near-peer. Using the Korean Peninsula as a backdrop, North Korean forces execute asymmetric attacks as a precursor to a conventional invasion on the peninsula. The extensive use of tunnel networks facilitate the infiltration of ten thousand North Korean regulars into South Korea to incite political unrest via committed Marxist student radical groups. Additionally, these regulars infiltrate U.S and ROK bases, going as far as to release canisters of anthrax bacteria to incapacitate and kill thousands. Once the conventional North Korean invasion ensues, in a surprising twist there is a simultaneous third party entry into the war with an invasion of Taiwan by the People's Republic of China (PRC)—extensively splitting use of U.S. forces. Urban streetfighting in Seoul is bloody and costly, reminiscent of WWII door to door fighting in Stalingrad. Eventually, the conflict culminates in a SCUD

delivered nuclear weapon, and North Korea and China sue for peace.¹⁸⁴

DEFENSE OF "DISTANT STRAITS"

The requirement to project significant amounts of U.S. military force across global distances is most evident in a scenario requiring the defense of "Distant Straits", whether they be those between China and Taiwan (Straits of Taiwan), or between Iran and Oman / United Arab Emirates (Straits of Hormuz).

In the case of the Straits of Taiwan, the U.S. would most likely employ significant amounts of long range aerospace and naval forces to shield the island and prevent an aggressive invasion by the PRC, who have taken offensive measures to fully blockade the island of Taiwan, seen as a "breakaway province". Irredentist efforts by the PRC would be defended by their official claim to the island as part of mainland China's sovereign territory, drawing the United States into a major war.¹⁸⁵ This "Great Power Competition" is described in keen detail by Krepenivich in his 1996 CSBA study, where complications arise when the PRC mines Taiwan's major ports, and targets its key facilities and airfields with long range precision guided ballistic missiles.¹⁸⁶

China's initial attack would involve a no-notice salvo of hundreds of short-range M-9 and M-11 ballistic missiles launched from Chinese bases at Yongan, Xianyou, and Leping (The Pentagon estimates current stockpiles at 200, growing 50 per year, with a total stockpile of 800 estimated by 2005).¹⁸⁷ Missile launch preparations would be exceptionally hard to detect, as explained by CINCPACOM, Adm Dennis Blair.¹⁸⁸ Targets would strike each of Taiwan's eight airfields, every seaport, and key command and control facilities on the island. Whether or not they would involve nuclear, chemical or biological warheads is questionable, depending on China's desire to invade and occupy the island after the attack. Some sources do estimate the Chinese could use neutron weapons, which kill with radiation but leave buildings standing.¹⁸⁹ Follow-on attacks would include an amphibious assault across the 70-100 nm strait.

US response would depend predominantly on immediate long-range, global airstrikes launched from CONUS, regional bases, and carrier battle groups—deep firepower attacks aimed at strategic centers of gravity in

¹⁸⁴ Weinberger, Caspar, and Schweizer, Peter, "The Next War", Regnery Publishing, 1998

¹⁸⁵ Mandelbaum, Michael, "Is Major War Obsolete?", *Survival*, Winter 1998-1999.

¹⁸⁶ Krepenivich, Andrew F., "The Conflict Environment of 2016: A Scenario-Based Approach", CSBA, Oct 1996

¹⁸⁷ Kagan, Robert, "How China Will Take Taiwan", *Washington Post*, 12 Mar 00

¹⁸⁸ Blair, Dennis, Adm, USN, CINCPACOM, as quoted in *Washington Times*, "Admiral Says Taiwan Invasion Would Fail", 8 Mar 00

¹⁸⁹ Dorgan, Michael, "Chinese Military Paper Warns Taiwan and US", *Philadelphia Inquirer*, 21 Mar 00

Shanghai and Beijing as well as operational and tactical attacks on targets along the Chinese coast. Significant AEGIS early warning / theater missile defense capability would be heavily tasked, as would anti-mine efforts to protect naval shipping and SEAD to permit freedom of air operations. Basing rights would become a significant concern, as access to regional bases would be a significant priority. Potentially, China could declare that Korea and Japan would not be threatened as long as they do not allow their bases to be used by American forces. U.S. forces would have to search for coalition/allied bases available in Thailand, Singapore, Philippines, Australia and New Zealand, as bases in Taiwan would be unusable and within easy striking distance of Chinese missiles. Noted Georgetown Professor Nancy Tucker emphasizes that this type of confrontation comprises the single most dangerous dispute for the U.S., where confrontation with this regional power could result in a colossally destructive war.¹⁹⁰ Chinese response to US intervention could include extensive information warfare, attacks against US satellites, and the use of multiple warhead long-range missiles capable of striking CONUS and US bases in the Pacific, including nuclear "warning shots" to force the US to withdraw.¹⁹¹ Weinberger and Schweizer also present similar emphasis on this possible scenario.

The Straits of Hormuz is a variation like that of Taiwan in that it entails Iran as a regional power exerting its power across a sea-line of communication. U.S. response is similar, with forces projected over long range to protect the free transit of oil tankers through the narrow straits. Iran begins to flex its regional muscle as a "streetfighter" state. Key elements to Iranian power is their ability to inflict significant damage with both ballistic and Silkworm anti-ship missiles while conducting extensive anti-access mining operations, backed up by submarine "underwatch" patrols. As with the Taiwan scenario, access is a critical issue, as Iranian forces are instructed to attack any port, base, or airfield employed by the United States or its allies in the attempt to introduce forces into the theater. US forces would again rely on long-range strikes. Interestingly, there is no force on force conventional battle planned by the Iranians should a U.S. led coalition conduct a massive, conventional forced entry and thrust north to Tehran. The Iranians do not plan to "close with and destroy" coalition forces. Instead, unconventional warfare operations would ensue as the Iranians would operate in small, difficult to target, independent groups conducting infiltration, hit-and-

¹⁹⁰ Tucker, Nancy, "China-Taiwan: U.S. Debates and Policy Choices", *Survival*, Winter 1998-1999

¹⁹¹ Dorgan, Michael, "Chinese Military Paper Warns Taiwan and US", *Philadelphia Inquirer*, 21 Mar 00

run, and suicide attacks.¹⁹²

COLLAPSE OF A NATION-STATE

A final scenario involves the internal collapse of a nation-state. U.S. vital interests are involved as the nation is either an ally or critically important to the stability of the region in question. Typically, such a scenario would fall under the definition of a classic SSC. However, it is conceivable that considerable amounts of US forces, up to and including an MTW level of effort, could be tasked in support of the operation—thus making this a “de-facto” MTW scenario. The collapse scenario forecasts combating large-scale enemy aggression (albeit, an internal aggressor “state or coalition”) in a region with only limited, austere basing and few seaports (if not totally landlocked) and more than likely a great distance from the United States. This scenario would entail the ultimate in U.S. expeditionary intervention and projection of military power. Additionally, the likelihood of military operations conducted in dense urban terrain would be very high.

In discussing war in the 21st Century, historian Stephen Ambrose notes the causes of such a collapse could center around nationalistic, ethnic, and religious strife, devoid of any ideological content most twentieth century wars have come to exhibit. Citing the civil war in Iraq, he states it is perhaps more indicative of the future of war than the preceding conflict in the Gulf. He emphasizes that around the world, nation states are beset by unhappy minorities, who can get arms from one of the superpowers or from European suppliers. He warns that civil wars are possible in Yugoslavia, Czechoslovakia, Philippines, throughout Central America, almost everywhere in Africa, and the worst scenario would be within the former Soviet Union.¹⁹³

In parallel with Ambrose is Mandelbaum’s concept of “secession” as it applies to the mismatch between the location of borders and the location of peoples, where one group dominates another against their will. Secession involves an ethnic, linguistic, or national group seeking to leave a state ruled by another and govern itself. His examples are numerous, such as the Russian-Chechen war fought between ‘93-96 (and one could also include the ‘99 conflict), Tibetan/Muslim unrest in the western part of China, Eritrea’s secession from Ethiopia, Kashmir Muslims rebelling against Indian rule (where Pakistani involvement threatens), Kurdish resentment toward subordination by

¹⁹² For more detailed and comparable views on this scenario, see Krepenivich, Andrew F., “The Conflict Environment of 2016: A Scenario-Based Approach”, CSBA, Oct 1996 and Weinberger, Caspar and Schweizer, Peter, “The Next War”, Regnery Publishing, 1998

¹⁹³ Ambrose, Stephen, “Americans At War”, University Press of Mississippi, 1997, pages 196-197

Turkish, Syrian, and Iraqi governments, and the ever present Palestinian - Israeli discord. Mandelbaum contends that the mismatch between state and nation has and will continue to give rise to violent conflict.

This scenario takes the excursion where the internal conflict in these regions does not remain localized and instead embroils the U.S. well beyond an attempt at peace-making between the warring parties. While it is true most civil strife does incur world sympathy, no official support is often given. Understandably, sovereign states prefer to regard all existing borders and governments, no matter how arbitrarily, as legitimate and permanent. In this case, however, U.S. participation in such a high-end conflict would be justified by the gravest national, if not world, interest to stabilize the situation. The U.S. may have to consider overthrowing an extremist enemy regime that is developing nuclear weapons or committing genocide.¹⁹⁴ As such, the U.S. military would need to project a significant amount of military power to arrest the deteriorating situation. Agreeably, Chechnya is one case where the United States has used only political efforts to influence. But what if the nuclear powers of India and Pakistan clashed over Kashmir?

One possible variation of this scenario involves the collapse of Colombia, where the coalition of a leftist/Marxist guerilla force and drug cartel operatives succeed in toppling government leadership and embroil Colombian forces in a land combat environment reminiscent of the Vietnam war. US support, already heavily involved as military advisors, could escalate to significant land force levels, possibly reaching that of an MTW effort. Though an advanced military threat would be limited (no heavy SAMs or theater missiles), access to Colombia would be daunting. Ports at Barranquilla, Santa Marta, and Cartagena are hardly suited for significant disembarkation of supplies and troops. US airfields within the region are practically non-existent, especially with the recent hand-over of Howard AB to the Republic of Panama. Local airfields are not much better, and significant expeditionary operations would have to be set up. Poor road networks throughout the varied terrain (from triple canopy jungles to heavy mountainous regions) make for poor land transportation and logistical networking. Armor would be almost completely ineffective—emphasis would have to focus on light, lethal land forces to tediously route out guerilla/drug strong holds. US airpower would be similarly challenged, as precision attack through dense foliage would be heavily dependent on exceptional ISR (highly detailed and timely)—somewhat of a difficult task against a highly foot-mobile enemy, beneath heavy jungle and mountainous cover. Other issues would be just as demanding,

¹⁹⁴ O'Hanlon, Michael, "Can High Technology Bring U.S. Troops Home?", *Foreign Policy*, Winter, 1998/1999

such as the need for refugee control, PSYOPS and military affairs.

IN SHORT, THREE NEW MTWS

As presented above, one MTW definitely does not equal another. A China-Taiwan scenario requires the application of a totally different force than the collapse of Colombia. Even the classic Iraqi invasion scenario takes on a whole new light when WMD is incorporated. Understandably then, we must focus our efforts to learn how to fight in varied scenarios. Certainly, there are those who would put more emphasis and value on one scenario than the other, based upon their specific belief of the future security environment. Regardless of any strategic prediction, the fact remains that the classic, canonical two MTW scenarios no longer seem to have value faced with the challenges the future is sure to present.

CHAPTER 5

CONCEPTS AND CAPABILITIES FOR MAJOR THEATER WAR

*"The art of war is simple enough.
Find out where your enemy is.
Get at him as soon as you can.
Strike at him as hard as you can,
and keep moving on."*

General Ulysses S. Grant

Given a broader MTW definition, and recognizing there are several possible MTW scenarios, there is no single "point solution" on how to fight all future wars. However, in blending the shared perspectives reflected in current Joint and Service visions, there are common warfighting concepts and critical enabling capabilities needed to fight and win future MTWs.

THE CONCEPT OF SWIFT ENEMY DEFEAT

No matter what scenario presents itself, National Command Authority objectives would most certainly focus on swiftly defeating enemy forces, rather than a slow response. QDR '97 prescribed this concept when it recommended U.S. forces be able to "rapidly defeat initial enemy advances short of their objectives in two theaters in close succession, one followed almost immediately by another."¹⁹⁵ NSS '00 language is almost identical, emphasizing:

"...we must maintain the ability to rapidly defeat initial enemy advances short of the enemy's objectives in two theaters in close succession. We must maintain this ability to ensure that we can seize the initiative, minimize territory lost before an invasion is halted and ensure the integrity of our warfighting coalitions. Failure to defeat initial enemy advances rapidly would make the subsequent campaign to evict enemy forces from captured territory more difficult, lengthy, and costly, and could undermine U.S. credibility and increase the risk of conflict elsewhere."¹⁹⁶

Understandably, the NCA would commit to the rapid employment of adequate and appropriate combat power in the most efficient and effective manner to fight and win against large-scale enemy aggression, thereby seizing the initiative, halting of enemy aggression, and denying the enemy their objective.

This concept of "swift enemy defeat" stresses the importance of *speed* of response, as well as the overwhelming *nature* of the response. In a sense, it is a *strategic* "coup de main"¹⁹⁷, capitalizing on surprise and

¹⁹⁵ Report of the Quadrennial Defense Review, 1997

¹⁹⁶ National Security Strategy For a New Century, The White House, Jan 2000

¹⁹⁷ JCS Jt Pub 1-02, "DoD Dictionary of Military and Associated Terms", 23 Mar 94, defines *coup de main* as "an offensive operation that capitalizes on surprise and simultaneous execution of supporting operations to achieve success in one swift stroke"

simultaneous execution of operations at to achieve success in one swift stroke in a major theater conflict. It tightly interweaves key joint warfare principles (*offensive-mass-maneuver*), fundamentals (*seizing the initiative-concentration-extended operations*) and operational art (*synergy-simultaneity/depth-timing/tempo-centers of gravity*) into an overarching construct of swift, decisive force that forces enemy collapse at strategic levels from long distances. It compresses actions across time to create desired effects across key nodes, both deep and close. Dr Dan Goure, from CSIS, explained "Once the 'line' is crossed by an aggressor, the options and pacing should be ours despite the likelihood that our opponent will initiate the conflict...a new American way of war must retain and control the initiative (and) must have options for preemptive actions such as spoiling missions or even large-scale decisive strikes in order to give our decision makers the ability to retain control of the course of the conflict."¹⁹⁸ Swift enemy defeat does just that. For example, if needed, it can employ pre-emptive strike options (to deter use of WMD), focus on asymmetric response to adversary actions (such as retaliation with sophisticated information attack), or disproportionate response to reach out, punish, and teach the adversary a lesson.

Concepts similar to swift enemy defeat have existed in kind for many years. Hans Guderian advocated such principles with his *Blitzkrieg*—Lightning War—stressing rapid penetration deep into enemy territory to create shock and effects. J.F.C. Fuller and B.H. Liddel Hart promoted swift, indirect attacks in depth to collapse an army. Russia's Mikhail Tukhachevsky developed the strategy of shock and offensive operations in depth, capitalizing on technology to defeat the enemy. Used in today's modern context, swift enemy defeat builds on those original ideas with the availability of weapons with greater lethality, range, and precision.

Jointly Shared Perspectives

All four services share a common perspective of swift enemy defeat. The Army's concept of "strategic preclusion" supports the Army's AFDO endstate, defined as the rapid and decisive joint force contingency response to crises, terminating them in their early stages or placing an opponent at an early, continuing, and decisive disadvantage—strategically precluding escalation.¹⁹⁹ The former USAF concept of "Rapid Halt" was an operational strategy originally applied to the initial "Halt Phase" of a major theater enemy invasion in the canonical MTW scenario. Now, it has been greatly modified and incorporated into the developing Air Force Concept of Operations (CONOPS). In the *Respond* phase of an MTW, the Air Force CONOPS views controlling an adversaries actions by

¹⁹⁸ Goure, Dan and Szara, Christopher, "Air and Space Power in the New Millenium", CSIS, 1997, page 74

¹⁹⁹ DAMO-SS Briefing on AFDO, 25 Oct 99.

rapid, global response to isolate and incapacitate, halting the enemy capability to react, and conducting parallel attacks.²⁰⁰ Navy and Marine Corps reflect similarly parallel thought on swift enemy defeat. Network Centric Warfare's (NCW) fundamental MTW endstate is the "rapid foreclosure of enemy courses of action and the shock of coupled events, disrupting the enemy's strategy and stopping something before it starts".²⁰¹ NCW is clearly supported by Operational Maneuver from the Sea (OMFTS) and Ship to Objective Maneuver (STOM).²⁰² Specifically, OMFTS seeks "the maneuver of naval forces...for a decisive effect from the sea, striving for victory by exploiting significant enemy weaknesses in order to deal a dominant or decisive blow."²⁰³

This all is tied together by JV 2010, where in the description of dominant maneuver supports the need for "decisive force to attack enemy centers of gravity at all levels...(compelling the) adversary to either react from a position of disadvantage or quit."²⁰⁴ Furthermore, Joint Forces Command, responsible for joint experimentation, is exploring the similarly unifying concept of "Rapid Deployment Operations (RDO)." RDO's hypothesis is if a highly deployable, lethal, agile, survivable, and supportable force can conduct a deep operational strike against the adversary's operational and strategic centers of gravity, then the US can coerce its adversary into conceding without having to conduct a protracted campaign.

Swift enemy defeat requires combat forces to employ with incredible speed and response. Speed of response creates four significant conditions, where "sooner is better":²⁰⁵

1. Reduces engagement time, friendly casualties, and destruction/damage to non-combatant assets, territory, and people.
2. Increases vulnerability of large enemy forces still in assembly, staging areas, at lines of departure, or on the move, before arrival at their objective and dispersal into defensive positions.
3. Keeps the enemy off balance, frustrating his strategy, balance, and coordination/synchronization.
4. Frustrates enemy efforts to delay or deny entry U.S. forces into theater, by quickly securing and protecting critical ports and airfields with lead elements for subsequent entry by follow-on units.

²⁰⁰ Air Force's Concept of Operations (CONOPs), Draft, Feb 00

²⁰¹ Cebrowski, Arthur VAdm, USN and Garstka, John, "Network-Centric Warfare...Its Origin and Future", Proceedings, Jan 98. See also "Network Centric Works for Marines", by Lt. Gen J Rhodes, Proceedings, Sep 98.

²⁰² Rhodes, J, Lt. Gen, Commandant of MCCDC, "Network Centric Works for Marines", Proceedings, Sep 98.

²⁰³ Hoffman, Frank G., "JV 2010 - A Marine Perspective", Joint Force Quarterly, Autumn/Winter 1997-1998

²⁰⁴ JV 2010, July 1996

²⁰⁵ Riggins, J, Lt. Col USAF and Snodgrass, D, Lt. Col USAF, "Halting the Myths: Understanding and Applying a Joint "Halt-Phase" Concept", National War College Paper, 3 May 99. Also published in Parameters, Autumn '99

Conceptually, U.S military must respond with overwhelming combat power--compressing timelines from months and weeks, to days and even hours.²⁰⁶ This ability creates significant deterrent value, especially if the adversary is not only aware of the existing capability and will, but also fears their use.

Supporting Concept - Parallel Warfare

Parallel warfare compliments swift enemy defeat. Parallel warfare is the simultaneous application of force (in time, space, and at each level of war) against key systems to effect paralysis on the [enemy's] ability to function as it desires. The object of parallel warfare is to control the opponent's strategic activity.²⁰⁷ Simultaneous application of force is not a new concept, as it was demonstrated at Pearl Harbor and the Philippines in 1941, during the Arab-Israeli War in 1967, and the Libya raid in 1986. DESERT STORM and ALLIED FORCE brought parallel warfare into a new light, where precision weapons and stealth allowed simultaneous attack against all vital enemy systems (leadership, industry, transportation, communications, fielded forces, etc.) rather than a stoic, sequential process of annihilation (outright destruction) and attrition (exhaust the enemy before he exhausts you).²⁰⁸ The parallel warfare strategy of achieving systemic effects goes hand in glove with the overall goal to quickly prevent the enemy from reaching his desired objective—neither implies attacks only on forces having an immediate impact on the fight. Synchronized effects in depth will maximize physical shock and paralysis—that shock and paralysis comes from parallel, simultaneous attack on the entire array of high value strategic, operational, and tactical targets as centers of gravity to achieve a desired effect. Parallel warfare changes the basic character of war, and has the potential to reduce deployment, forward basing, fighting, casualties, time, and forces previously required to win in war.²⁰⁹

Supporting Concept - Effects Based Warfare

Effects based warfare (EBW) goes hand in hand with parallel warfare and enhances swift enemy defeat. The fundamental objective of warfare is to impose one side's will on the other, and to have an overarching political effect to coerce and influence the adversary. This is primarily done by creating conditions and effects on the enemy

²⁰⁶ The Army's concept of Strategic Preclusion stresses the need to increase the velocity of maneuver from staging bases from *weeks* to *months* to *days*. The Air Force Concept of Operations (CONOPS) focuses its response time even further, from *days* to *hours*.

²⁰⁷ Deptula, David, Brig Gen, USAF, "Firing for Effect: Change in the Nature of Warfare", Aug 95

²⁰⁸ "Makers of Modern Strategy, from Machiavelli to the Nuclear Age"—Chapter on "Delbruck: The Military Historian", by Gordon Craig, 1986, pages 341-345

²⁰⁹ Deptula, David, Brig Gen, USAF, "Firing for Effect: Change in the Nature of Warfare", Aug 95

to force them to choose a course of action (COA)—whether to withdraw, retreat, delay, defend, escalate, or attack. Ultimately, one side wants to control which COA the other side chooses. EBW is based on the creation of effects ultimately controls the enemy's ability to operate—essentially controlling the enemy with effects. Destruction of enemy forces is merely one of the means to achieve control over enemy activity. However destruction needs to be focused on achieving the desired effects of removing the adversary's ability to use systems in the way the adversary values. Focusing on destruction purely for destruction's sake circumvents the purpose of employing combat force in the first place, does not answer the "why" question, and takes a considerable amount of time before the enemy is defeated. For example, defeating an enemy force should never first conjure up a percentage (let's notionally say, 60%) of destroyed tanks and armored personnel carriers on the road. Instead, it should conjure up the goal of precluding the enemy from reaching his goal. Using EBW, and focusing on the goal of preclusion, perhaps all that is needed is to destroy 20% of the vehicles at a choke point, destroy one key bridge, inhibit command and control, and shut off a logistical fuel supply. In the end, the amount of vehicles destroyed is irrelevant—however, rendering the enemy force useless is often as effective as eliminating the enemy force itself. EBW also offers the ability to impose effects independent of the massing of forces. If the same effect can be imposed without the physical presence or large scale massing of forces, then in some circumstances (such as denied access or the force limitations presented by simultaneous MTWs), the deployment of forces can be replaced by the projection of forces.

The Naval concept of Network Centric Warfare recognizes the value of EBW, and focuses on answering the fundamental question "What are we trying to do?". Swift enemy defeat is reflected in NCW's emphasis on winning by not only physical means (through attrition), but also enemy reason and belief (foreclosure and shock). By first identifying the desired effects, subsequent application of appropriate means brings about swift enemy defeat.

Determining the effects required to achieve strategic, operational, and some tactical objectives are conducted through what is known as nodal analysis. The Joint Warfighting Analysis Center in Dahlgren, VA, (JWAC) serves as the joint organization responsive to the NCA and combatant CINCs for the conduct of operational analysis on centers of gravity and critical nodes, and provides recommendations for both lethal and non-lethal means to create desired effects. The JWAC and Defense Intelligence Agency (DIA) have begun to closely coordinate operations to ensure operational recommendations are linked with intelligence assessments.²¹⁰

²¹⁰Kautz, John, Intelligence Analyst, DIA, Interview with the author, 22 Nov 99

No “Cookie-Cutter” Template for Forces

The forces for swift enemy defeat are situation dependent—some may not apply in all situations at all times. The template must be flexible to incorporate the right mix of tools, tailored to the situation. Still, swift enemy defeat is a concept that places a priority on the rapid projection of force. Presently, any future MTW will be one of projection across great distances with little forward basing. Force structure investments must be a balanced approach of efficient tradeoffs for maximum effect. Investments in the global reach of aerospace power and naval forward presence are well suited in this regard, especially combined with the expeditionary power of Marine Ship to Objective Maneuver (STOM). Additionally, the Army’s vision of a highly deployable light, lean, lethal force, will greatly compliment joint force capabilities for a swift enemy defeat.

Swift enemy defeat does not mean one arm will always be the supported component, nor does it mean all components must arrive in theater before operations commence. The JFC will need to tailor the forces based on the situation. That tailoring should exploit the complementary nature of the components, while mitigating limitations. Remember too that a swift enemy defeat in Korea may not look like a swift enemy defeat in Southwest Asia, or a swift enemy defeat in the Taiwan Straits. There is no universal cookie-cutter solution. Strategic flexibility must remain in the application of its principles.

The Real Value of swift enemy defeat

In the past, U.S. forces could afford to “brute force” slug it out, counting on virtually unlimited resources. But in today’s resource and casualty/collateral damage constrained environment, that is no longer the case. Efficiencies will continue to pay high dividends. If U.S. forces can apply combat power more effectively and efficiently, achieving the desired effects and results, then perhaps there is opportunity to reduce overall risk (perceived or otherwise). What changes is the theory of force application, combined with newer technologies as force multipliers. In that regard, swift enemy defeat makes common sense. If we can apply paralyzing force early in an overwhelming strategic “coup de main”, there is less terrain to regain, less damage to rebuild, and more importantly less risk and cost of lives and assets. The warfight is considerably shortened. In a worst case scenario, with two major crises threatening to build to major war, speed in responding to the first might possibly (though not always guarantee) deterring the second. Crisis management in the second is far better than conflict. But if the second conflict does erupt, we are much better prepared to contain it after crushing the first in a rapid, concussive, overwhelming blow.

CRITICAL ENABLING CAPABILITIES - WHAT WE NEED TO WIN

Using swift enemy defeat and the supporting concepts of parallel and effects based warfare to fight and win, the application of substantial US combat and combat support force in a future MTW will require a “toolbox” of agile, reliable, and resilient enabling capabilities to sustain our future warfighting needs. To some degree or another, each of the following critical enablers will all be required to deter and defeat large-scale aggression, and as such reflect critical areas for future force planning. The following review of key enablers also offers considerations for where our force modernization and transformation goals should focus through the next QDR.

Dominant Battlespace Control

Three freedoms are preciously valuable to U.S. military forces—*freedom from attack*, *freedom to maneuver*, and *freedom to attack*. Freedom from attack is an absolute requirement for theater-based forces and a significant piece to the force protection challenge. Freedom to maneuver is a direct product of dimensional superiority. Freedom to attack requires the most risk-mitigated options for the offensive use of force.²¹¹ We must continue to attain dominant battlespace control, acquiring and protecting these freedoms ensures successful combat operations, minimal loss of forces, and ability to maintain the offensive and initiative. Jt Pub 3-0 emphasizes that “control of the sea and/or the air has been a pivotal wartime factor”, as well as control of space for C4ISR, and land control (via counter battery fire or indirect fire superiority) prior to close combat.²¹² Three areas requiring particular emphasis for sustained dimensional superiority in the future are air, space, and sea.

Dimensional Superiority in the Air

First and foremost, maintaining total and absolute control of the sky is pivotal to any warfight, as it shields joint and coalition forces from attack while exposing the enemy to the full array of American combat capabilities. Anything less than this enduring requirement to dominate the skies makes all other air, land, and sea combat operations more costly in lives, material, treasure, and time.²¹³ Parity with or inferiority to enemy air forces is unacceptable—nothing less than air domination will suffice. Air Domination contains two subsets, superiority and supremacy. Air superiority is that degree of dominance which permits the conduct of air, land, and sea operations at

²¹¹ Kennedy, Kevin, Col, Director, USAF Checkmate Division, Interview with the author discussing CSAF’s perspectives, 13 Oct 99

²¹² “Doctrine for Joint Operations”, JCS Jt Pub 3-0, 1 Feb 95, pages IV-5,6

²¹³ Hallion, Richard, Dr, USAF Historian, “We Need the F-22 For Air Supremacy”, Wall Street Journal, 19 Nov 99

a given time and place without *prohibitive* interference by the opposing force.²¹⁴ Air supremacy is that *further* degree of dominance over the enemy where they cannot undertake any offensive operations and few, if any, defensive ones—they are, in effect, in a state of air paralysis.²¹⁵ US forces must retain the capability to rapidly dominate (within days) adversary air forces and air defenses anywhere tasked. The battle to control the air involves the defeat of enemy fighters, surface to air missile systems (SAMs) and anti-aircraft artillery (AAA), and ballistic missiles. The tools which control the air are not limited to fixed-wing aircraft alone, nor are they limited to a specific Service. Aside from a preponderance of Air Force and Naval air assets, Army PATRIOT and ATACMS systems, as well as Special Operations Forces fit into the overall equation. Additionally, the magnitude of how much these threats effect our three freedoms is relative, and will effect our commitment in terms of allocating assets to protect. For example, in the conduct of offensive operations, air superiority may be all that is necessary in the conduct of effective operations. However, over friendly forces in rear, staging, and deployment areas, freedom from any attack is paramount, and air *supremacy* must be achieved. Likewise, protection of the “airbridges” from CONUS during the rapid deployment of forces is absolutely non-negotiable. The loss of any C-17 carrying U.S. troops and equipment—to an enemy fighter that slipped through our defenses—would be devastating and unforgivable.

U.S. Forces have had the luxury of air domination since the Korean War, but this is not the Nation’s birthright.²¹⁶ The air-to-air threat is significantly changing. China is reported to be attempting to acquire advanced airborne early warning radar platforms, 240 advanced SU-27 and SU-30 fighters, sophisticated upgrades to existing fighters, and an overall attempt to “transform [its air force] from a territorial defense force into a more aggressive one with greater capabilities to attack beyond China’s borders.”²¹⁷ SecAF F. Whitten Peters, summarized the pending enemy air threat very clearly—“At least six other aircraft—the Russian Mig-29, Su-27, and Su-35, the French Mirage 2000, and Rafale and the European Consortium’s Eurofighter—threaten to surpass the aging F-15 (now 20 years old), our current top-of-the-line air-to-air fighter.” All are either in or near production today and are available for export.²¹⁸ Gen Ryan added that without the F-22 to fend off attacks from these new threats, the

²¹⁴ “Command and Control for Joint Air Operations”, JCS Jt Pub 3-56.1, 14 Nov 94, page GL-4

²¹⁵ Hallion, Richard, Dr, USAF Historian, “Control of the Air: The Enduring Requirement”, White Paper, 8 Sep 99

²¹⁶ See discussion on warplan assumptions for aerospace superiority, Chapter 1 page 10

²¹⁷ “China Plans For a Stronger Air Force”, Washington Post, 9 Nov 99. See also “Israel Supplying Advanced Radar to China”, New York Times, 10 Nov 99, and “Top Brass Discuss Regional War Tactics”, South China Morning Post, 9 Nov 99

²¹⁸ “Battle for the F-22”, Air Force Magazine, Sep ‘99

leveraging capabilities of joint high value airborne assets (AWACS, JSTARS, and RIVET JOINT—all low density / high demand ISR platforms) could be lost.²¹⁹

Negation of enemy air defense SAM systems requires either suppression (SEAD), destruction (DEAD), or the use of stealth platforms to greatly reduce probability of kill. SEAD/DEAD platforms are very low density / high demand platforms, with the F-16CJ (primarily a killer), and the EA-6B (primarily a jammer). During Kosovo over 700 SAMs were launched, tasking SEAD platforms at intense operational combat rates, requiring continuous surveillance and protection. Suppression was successful with only 2 of 10,000 strike sorties lost to enemy fire (.02%). The effect of suppression was attained, partly due to weapons employment, but most significantly due to Serbian forces choosing not to illuminate SEAD aircraft with their radar systems since to do so would have resulted in a high-speed anti-radiation missile (HARM) attack. “Husbanding” of Serbian SAM systems, and their choosing not to engage, meant that permanent DEAD could not effectively occur, and the freedom from attack was never guaranteed. However, these Serbian defensive tactics significantly limited SAM effectiveness, as a high percentage of the 700 that were fired were fired optically, without radar guidance. Advanced Russian systems, such as the SA-10, SA-12, and SA-20 were not fielded to Serbian forces, though Gen Jumper, CINCUSAFE, was never really comfortable they did not exist.²²⁰ Lethal SAMs such as these will overwhelm our current fighter force’s ability to gain air superiority. The number of countries possessing SA-10/12 class missiles is expected to increase from 14 to 21 by the year 2005.²²¹ Additionally, current and future SAM systems (both radar and IR guided) pose the potential to significantly threaten airlift operations entering into and operating within a theater. Presently, all U.S. airlift assets have practically no capability to defend against SAMs. Other than a one-time dispersal of flares against a small shoulder fired missile, strategic and theater airlift assets are extremely vulnerable due to their speed, size, and lack of stealth or suppression capability. They can only safely operate in areas where air supremacy over SAMs exists. SecDef Cohen and CJCS Shelton commented in their Joint Kosovo After Action Review that “the heavy commitment of NATO’s air defense suppression forces indicates we need to find innovative and affordable ways to exploit our technological skills in electronic combat to bring greater pressure to bear on a future enemy’s air defense

²¹⁹ “Ryan on Fighters, Balkan War, EAF, Retention”, Air Force Magazine, Sep 99, page 28

²²⁰ “Jumper: NATO Lucky Serbs Didn’t Have Better Equipment”, Air Force Magazine, Oct 99, page 10

²²¹ Air Force White Paper, “Talking Points on the F-22”, SAF/AQPF, Aug 99

system.”²²² Both the Navy, Marines, and Air Force intend to upgrade their HARMs to increased geo-location capability minimizing the requirement for enemy SAM illumination for terminal guidance. However, increased stealth technology is the eventual goal, with the fielding of the multi-role F-22, and the stealth capability it leverages for the Tri-Service Joint Strike Fighter (JSF).

Stealth adds incredible technological leverage (especially when combined with precision weapons capability) to significantly reduce the amount of support aircraft required for air strike force protection in the presence of an intense SAM environment. In the very first hours of DESERT STORM, F-117 fighter aircraft were able to provide a 1200% increase in target coverage using 47% fewer aircraft than non-stealth aircraft in areas with equal or higher threat intensity. Similarly, in the first day of the war, 1096 non-stealth Joint and Coalition aircraft (attack and support) were used to strike 109 targets, at a ratio of 10 aircraft per target. However, only 45 stealth F-117 sorties were needed to strike 76 targets, a ratio of only 0.5 aircraft per target, reducing the ratio *twenty-fold*. Stealth successes continued throughout the DESERT STORM air campaign, where F-117 aircraft flew less than 2% of the combat sorties but hit over 40% of the strategic target base.²²³

ALLIED FORCE was no exception, with the continued employment of F-117s as well as 49 B-2 sorties launched on 30 hour-roundtrip missions from CONUS. 650 Joint Direct Attack Munition (JDAM) 2000-pound bombs were delivered following last minute GPS targeting updates in all weather conditions.²²⁴ The question often asked is whether SEAD and electronic countermeasures (ECM) were required for stealth assets over Kosovo. Lt. Gen Esmond, USAF/XO answered “No, it is not required—depending on the risks you want to put the aircrews at. If you have the capability, then the prudent person would say, why not suppress the threat with ECM as well as taking advantage of our stealth capability which all totaled up to the survivability of the platform. That is simply what we did.” Gen Jumper, former commander of USAFE, adds that “we put our stealth assets into the most dangerous places night after night and after the hundreds of sorties that have been flown in the most dangerous situations [in DESERT STORM and ALLIED FORCE], the loss of one [F-117] is certainly better than any of us expected.”²²⁵

One cannot overlook the need for adequate Theater Missile Defense in the quest for securing dimensional

²²² Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, “Joint Statement On The Kosovo After Action Review”, 14 Oct 99

²²³ Deptula, David, Brig Gen, USAF, “Firing for Effect: Change in the Nature of Warfare”, Aug 95, page 9, Unclassified information extracted from DESERT STORM “Master Attack Plan: First 24 Hours, 2121, 16 Jan 91”

²²⁴ Grant, Rebecca, Dr, “The Kosovo Campaign: Aerospace Power Made it Work”, Sep 99, page 19

²²⁵ Ibid, page 17

air superiority. Regardless of the debate of whether an adversary would use WMD, SCUD missiles delivering such ordnance on U.S. forces in theater cannot be brushed aside. Therefore, US Forces must strive to be able to render an adversary's cruise and ballistic missile assets ineffective before launch or soon after. Certainly, U.S. forces have practiced throughout the Cold War against a chemical or biological threat, with dispersal being the primary method to survive and operate. However, dispersal bases may be few, and at a great distance, requiring all the more long-range power projection capabilities to conduct continued operations. As explained earlier, combat operations within a chemical or biological environment would slow considerably, negating much of the initiative and offensive swift enemy defeat seeks to gain. Therefore, efforts to field improved PATRIOT and THAAD systems, Naval systems (see below), as well as the Airborne Laser, will do much to secure in-country forces from this destructive threat.

Dimensional Superiority at Sea

The U.S. Navy's dominance at sea control remains uncontested after the demise of the Soviet Union. Fundamentally structured around 12 CVBGs and 57 submarines, the Navy "blue water" threats have receded to "brown-water" threats, where the Navy expects to project "Forward...from the Sea" in support of land operations, and projecting influence ashore with land attack and Marine OMFTS. Maintaining "blue water" sea control with the extended reach of carrier air, especially with the arrival of the new F/A-18E/F, will remain adequate for the near future. However, the risks of theater ballistic missiles to surface vessels in littoral "brown-water" environments has prompted the need to reassess force protection requirements. The inherent stealthy nature of submarines provides an unprecedented capability to provide long-range TLAM fire support to objectives ashore, while simultaneously being protected in high-threat littoral areas. This will require investment in organic mine warfare to ensure surface and subsurface access to the littoral regions. Sec of the Navy Richard Danzig is currently considering the conversion of Ohio class Trident submarines to a TLAM role, so that Arleigh Burke-class destroyers and future DD-21 destroyers can pick up significant theater missile defense roles (including a Cooperative Engagement Capability {CEC}) desperately needed for littoral sea control and access not only at sea, but to component bases ashore.

Dimensional Superiority in Space

President Clinton, in a letter to SecDef Cohen, emphasized that "Now and in the next century, our national security, civil, and commercial space sectors will continue to depend on reliable access to space to achieve our

broad national goals.²²⁶ We have recognized that the U.S. Military is no longer the sole proprietary user of space. Commercial use has increased at an exponential rate, displaying surveillance and communications capabilities that compete with the very best classified military platforms. Needless to say our adversaries thirst for this type of parity, and may soon be able to acquire it.²²⁷ As such, US Forces need the capability to protect its own space assets, and deny an adversary's ability to exploit space. China recently demonstrated it is ever so close to a manned space mission, with their recent test of a spacecraft that orbited the earth 14 times.²²⁸ The freedom from attack is none the less an extremely significant issue to be contended with. U.S. military space operations are faced with a myriad of space control issues that must be prepared for or else we will be doomed to suffer space parity, or even space inferiority, at the hands of our adversaries. Given that we rely so much on space for communications, navigation, and intelligence/surveillance/reconnaissance (ISR), it is a perfect target akin to our Achilles' heel. We need to be able to control "the high ground."

Present threats center around ground based interference to space based platforms to deny and disrupt information, and have the potential to cripple our ability to conduct long-range swift enemy defeat operations. Everything from jamming GPS navigation and targeting signals, to misdirecting ISR information, to shutting off SATCOM is vulnerable. Even infiltrating and redirecting satellite propulsion and guidance systems is "a player", with ground base hacker adversaries potentially being able to spin our satellites out of orbit. Space based lasers to shoot down satellites and anti-satellite (ASAT) missile technology are still several years off. So although what remains is not what we would probably imagine as "classic" space warfare, it technically is. Its time we recognize space as a new theater of conflict, and focus on freedom from attack. The question is, how do we defend?

In general, the best approach would be a combination of hardening and redundancy. Hardening against electromagnetic pulse (EMP) and "jam-proofing" satellites during development/construction entails a mere 1-5% of the total cost. Hardening once spaceborne is quite expensive, if not impossible. The balance of defense can focus on redundancy, as it would minimize our dependency on specific systems by either having back-up platforms available to fill in, or focusing our investing in the capability to divert / reroute / and redirect operations through multiple, layered back-up channels. NASA's Nanosat Technology Development Program, wherein microtechnology and

²²⁶ Taken from the text of a letter from President Clinton to the Secretary of Defense, 29 Nov 99

²²⁷ "The New Space Race", U.S. News and World Report, 8 Nov 99

²²⁸ "China Moves a Step Closer to a Manned Space Mission", USA Today, 22 Nov 99

microelectromechanical systems (MEMS) are being developed, show great promise in reducing the size of satellites to almost 2 pounds, and employing them in "swarms" rather than singletons. If one or several of the small satellites fails (or is attacked), numerous others could redistribute themselves and continue performing the assigned task.²²⁹

Robust C4ISR

The pace of warfare is accelerating and future commanders must make lightning fast, accurate decisions, reducing the time for execution from days to hours to minutes. Swift enemy defeat requires dominant battlespace awareness gained through fully internetted C4ISR systems, where information is rapidly received, analyzed, and shared amongst all players in the joint force, preferably in near real-time. Joint forces need the sustained ability to "look deep" from the outset of the conflict throughout culmination. Fused information sharing will allow the joint force to conduct parallel attacks, increase battlefield awareness, assist with combat identification, and reduce ambiguity. Networks to enhance C4ISR must also be designed to increase performance within conditions of uncertainty, facilitate collaborative knowledge building, and build a "better picture faster." However, we must avoid "paralysis by analysis" pitfall the deluge of information C4ISR could possibly bring, and remain focused on making a decision faster than the enemy.²³⁰

Critical LD/HD platforms presently support C4ISR operations, and were in extremely high demand during ALLIED FORCE—so much so that they were pulled from covering other world regions to support the singular operation. LD/HD platforms include U-2s, RC-135s RIVET JOINT, E-3A AWACS, EP-3, JSTARS, EA-6Bs, and PATRIOT. Presently, every airborne platform listed, other than JSTARS, is no longer in production. Efforts can be made to replace such platforms and increase the density ratio. However, limited crews exist. Buying more platforms does not automatically mean additional crewmembers can be trained overnight.

Unmanned Aerial Vehicles have add considerably to joint C4ISR capabilities. During ALLIED FORCE, UAVs were used to an unprecedented degree by joint and coalition forces.²³¹ Missions included reconnaissance, target detection, battle damage assessments, and in certain cases, target designation. Lessons learned point to the need for improved mission planning and interaction between manned aircraft. First introduced in during the Vietnam

²²⁹ "Giant Hopes For Tiny Satellites", New York Times, 9 Nov 99

²³⁰ Louisell, William C., Col, USAF "Winning in Time: Enabling Naturalistic Decision Making in Command and Control", 56 FW Whitepaper, Jan 00.

²³¹ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, "Joint Statement On The Kosovo After Action Review", 14 Oct 99 Note: UAV systems employed in Kosovo included the USAF *Predator*, Navy *Pioneer*, Army *Hunter*, German *Droner*, as well as French and British systems.

War, UAV capabilities have since improved significantly. Kosovo use also included target-spotting, assessment, tracking of Albanian refugees, and confirmation of Serbian troop withdrawal.²³²

Only 15 UAVs were lost—which points to their perceived expendable nature and ability to mitigate risk to aircrews where slow-speed loitering to gather information would otherwise be extremely high risk. However, if U.S. forces become too dependent on UAVs, loss of an aircraft will significantly blind intelligence gathering efforts and reduce situational awareness. Future UAV development may need to include higher maneuverability to avoid ground fire, defensive armor, and stealth characteristics. Key questions still exist as to where and what extent the information from UAVs is downlinked, and who controls its flight. The best alternative is to let the sponsoring Service operate the aircraft, yet downlink the imagery to all components of the joint force. Additionally, methods to allow UAVs to conduct offensive attack should be explored, such as the Unmanned Combat Aerial Vehicle (UCAV), being evaluated by DARPA and the USAF. Given such improvements, combined with present technology efforts, someday UAVs could extend the reach of a swift enemy defeat by flying thousands of miles to conduct not only C4ISR but attack operations as well.

Long-Range Mobility Assets

The “long-pole” in the capability tent is the competing demand for mobility assets. US Forces must have the lift and enroute infrastructure available to respond within hours of tasking, as well as having the capability to swing high-priority forces from theater to theater. At the initial onset of large-scale aggression, air assets will be dedicated to first arrival forces, namely high-priority CINC requirements such as fighter squadron support, precision munitions, PATRIOT Missile Defense systems and Apache Attack helicopters. Sealift is not expected to arrive until three weeks after initiation of the conflict. The Army’s vision of a Brigade being transported in 96 hours / Division in 120 hours will require significant lightening and leaning of the force. Presently, current CINC CONPLAN/TPFDDs depend on a C-5 mission-capable rate of 75% (yet it is now well below 61%). 135 C-17 aircraft will be required, to fill out the current inventory of 52. A full fleet of 19 Navy Roll-on/Roll off ships will be available in 2006 (10 are available now). Improvements have been made in sealift capability to increase the readiness level of the Ready Reserve Force (RRF). As recommended by Sec Cohen and the Gen Shelton, “increased

²³² “Unmanned Aircraft Earning Wings Over Balkans”, Dallas Morning News, 25 Oct 99.

use of sealift assets should be considered in future conflicts and contingencies.”²³³

Swift enemy defeat will be significantly enhanced by several improvements to current air mobility capabilities. Forecast purchases of an extended range C-17ER will do much to increase the strategic flexibility of U.S. forces in an environment of limited overseas access. The C-17 performed exceptionally well as the airlift workhorse in ALLIED FORCE. It made “the concept of direct delivery of the strategic movement of cargo from an aerial port of embarkation to an airfield as close as practicable to the final destination—a reality.”²³⁴ Higher throughput at in-country bases, lesser time spent on the ground during offload, ability to use austere bases, and the ability to flex to in theater missions make the aircraft an exceptional tool. A critical analysis of the force structure requirements for swift enemy defeat will subsequently allow a determination to be made on how limited mobility assets, both air and sea, should be prioritized for use, especially in the light of increased demand for precision munitions stockpiles and the Army’s aggressive efforts to develop a light, lean, and lethal Full Spectrum Brigade.²³⁵

Precision Weapon Lethality

US Forces need the capability to create desired effects within hours of tasking, anywhere on the globe, to include locations deep within an adversary’s territory. Similarly, they need to be able to create precise effects rapidly, with the ability to retarget quickly, against large target sets anywhere, anytime, for as long as required. Precision weapons are a significant enabler to swift enemy defeat, allowing for high volume of precision effects delivered from great distances. In WWII, bombing was very crude, requiring upwards of 1000 aircraft and 9000 bombs to destroy one target, as only a very small percentage of bombs ever hit close enough to do enough damage. Collateral damages were extremely high. Over the entire war, only 20% of the bombs visually aimed at targets fell within 1000 feet of their aim point.²³⁶ Contrast that with DESERT STORM, where in many cases one precision guided munition (PGM) from one aircraft could destroy the target with laser guided accuracy of 10 feet from their aim point. In ALLIED FORCE, one B-2 bomber with 16 JDAMs could deliver accuracy of less than 10 feet against *16 separate* targets, in all weather conditions. In a very short period of time, paradigms have shifted from how many

²³³ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, “Joint Statement On The Kosovo After Action Review”, 14 Oct 99

²³⁴ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, “Joint Statement On The Kosovo After Action Review”, 14 Oct 99

²³⁵ For more background on this concept, see “The Full Spectrum Brigade - Organizational and Operational Concept”, Department of the Army, 1 Nov 99 as well as “Ground Forces for a Rapidly Employable Joint Task Force: First Week Capabilities for Short Warning Conflict”, RAND Corporation, Dec 1999 (Draft)

²³⁶ “U.S. Strategic Bombing Survey, Summary Report (European War)” 1945, reprinted 1987

aircraft it takes to destroy a target (1000 in WWII) to how many targets a *single* aircraft can destroy (16 in ALLIED FORCE), without any associated collateral damage. Sec Cohen and Gen Shelton reported to Congress that the use of the latest generation of air-delivered munition systems (e.g. JDAM) in Kosovo validated production plans to increase inventories.²³⁷ At under \$20,000 per copy, the JDAM is the most inexpensive yet most accurate air-delivered munition in U.S. history.

70% of the targets struck during ALLIED FORCE were hit with PGMs, to include a vast array of laser PGMs (50%), television guided, and GPS/Inertial Navigation System (INS) weapons. Approximately 450 Navy TLAM and 90 Air Force CALCM missiles were employed as well.²³⁸ In over 78 days, 23,000 weapons were either dropped or fired, with only 20 incidents of collateral damage (1/10th of 1%).²³⁹ In the light of the heavy use of during ALLIED FORCE, the Air Force, Navy, and Marine Corps are now reviewing requirements for PGMs for future conflict. Bad weather inhibited certain laser-guided attacks over Kosovo, where there was at least 50% cloud cover more than 70% of the time.²⁴⁰ To combat this, enhanced glide bomb unit (EGBU) packages have been developed for laser guided bombs. DoD expects to improve standoff all weather precision capability with the Joint Stand-off Weapon (JSOW), Joint Air-to-Surface Missile (JASSM) and improved TLAM. Such efforts will increase aircrew survivability with longer-range stand-off without sacrificing precision or collateral damage. More significantly however, efforts are being made to develop lower cost, all weather precision weapons of smaller scales. Aside from 2000-pound versions, JDAMs can be produced in 500-pound variants. Even smaller Small Smart Bombs (SSBs) carrying GPS guidance and weighing only 250 pounds, are being evaluated. The concept would allow a B-2, normally outfitted with sixteen 2000 pound JDAMs, to carry eighty 500 pound versions, or *two-hundred* 250 pound versions. Smaller scale weapons with highly accurate all weather guidance allow for increased target area coverage per sortie (upwards of two hundred), lesser collateral damage (especially in urban areas), lesser cost, and significantly smaller logistical re-supply requirements.

Cyber Warfare Expertise

Since ALLIED FORCE, reports have surfaced stating that the U.S. "Opened Cyber-War" for the first time

²³⁷ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, "Joint Statement On The Kosovo After Action Review", 14 Oct 99

²³⁸ Krosiak, Steve, "Total Cost of Allied Force Air Campaign: A Preliminary Estimate", CSBA Report, 10 Jun 99

²³⁹ Clark, Wesley, Gen, SACEUR, testimony to SASC on Lessons Learned in Kosovo, 21 Oct 99

²⁴⁰ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, "Joint Statement On The Kosovo After Action Review", 14 Oct 99

in Kosovo.²⁴¹ Official confirmation, however, has not been documented. One unnamed official stated “They’re [the Serbians] pulling their hair out at the computer terminals... We know that,”²⁴² and other reports explain info operations were merely classical electronic combat jamming and simple fax-bombardment. Gen Clark, SACEUR, stated “I think that [a cyber-attack] is something significant... It’s not something I want to talk about.”²⁴³ Gen Jumper, former CINCUSAFE, commented there was “a great deal more to talk about with regard to information warfare that we were able to do for the first time in this campaign and points our way to the future.”²⁴⁴ Reports on what was done in regard to cyber-warfare are still classified. However, an Air Force Association report predicts, that “One day, when the veil lifts, the conclusion may be that the Kosovo operation marked a new stage of evolution in the contribution of information warfare to aerospace power.”²⁴⁵ Sec Cohen recognized that successfully conducting operations to disrupt or confuse an enemy information abilities in becoming increasingly important in this “information age” of warfare.²⁴⁶

Regardless of whether it did or did not happen, total offensive information warfare (TOIW)²⁴⁷, or cyber-warfare, is an electronic sword that could create significant effects in support of future MTWs. US Forces need to ensure they retain unhindered use of the information domain from all attempts to deny, disrupt, destroy, or corrupt it. Likewise, they must be able to similarly exploit or neutralize any adversary’s ability to use the information domain. Theoretically speaking, such warfare can invade foreign computer networks, shutdown electrical facilities, interrupt phone service and any other number of electronic mayhem. Such attacks can strategically cause parallel effects that are just as debilitating to an adversary as kinetic, conventional weapons. Electronic attacks to confuse, influence, and coerce an opponent can do much to speed the halt of an invading force. The question remains as to the legality and ethical nature of such an attack—as yet, there are no rules for this new, albeit exciting frontier. Should it be a war crime? Should it be limited under arms control agreements? There are other questions that will have to be

²⁴¹ “U.S. Opened Cyber-War During Kosovo Fight”, Washington Times, 24 Oct 99. See also “Kosovo Ushered in Cyberwar”, Federal Computer Week, 27 Sep 99 and “Military Grappling With Rules for Cyber Warfare”, Washington Post, 8 Nov 99

²⁴² Grant, Rebecca, Dr, “The Kosovo Campaign: Aerospace Power Made it Work”, Sep 99, page 19

²⁴³ “U.S. Opened Cyber-War During Kosovo Fight”, Washington Times, 24 Oct 99.

²⁴⁴ Grant, Rebecca, Dr, “The Kosovo Campaign: Aerospace Power Made it Work”, Sep 99, pages 19-20

²⁴⁵ Ibid

²⁴⁶ Cohen, William, SecDef, and Shelton, Henry, Gen, CJCS, “Joint Statement On The Kosovo After Action Review”, 14 Oct 99

²⁴⁷ Denny, Douglas, Cmdr, USN, J-39 “Information Operations: The Legality of Cyber Attack and International Effects”, draft paper for possible submission, 10 Mar 99, page 5

resolved before we can really exploit this capability.

TOIW is defined as a synergistic offensive electronic strike against centers of gravity of outlaw states--- states that fall under condemnation by UN Security Council resolutions.²⁴⁸ In terms of swift enemy defeat it can be used to create strategic effects. TOIW would target the adversary economy, communications, military and government infrastructure, and public infrastructure. In terms of legality, a vehicle exists under Article 41 of Chapter VII of the United Nations Charter, specifically stating:

“The Security Council may decide what measures not involving the use of armed force are to be employed to give effect to its decisions, and it may call upon the Members of the United Nations to apply such measures. These may include complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication, and the severance of diplomatic relations.”²⁴⁹

Article 41 has been invoked in the past against Iraq in '91 (UNSC Res 661), Libya in '92 (UNSC Res 731), and Yugoslavia '92 (UNSC Res 757). These measures were traditionally economic sanctions, but Article 41 opens the door for other possibilities.²⁵⁰

Surely, to boldly announce to the world that the U.S Military will now begin employing TOIW in conjunction with high-end conventional combat forces would be extremely premature and internationally politically detrimental. More has to be done in terms of clarifying international law as we venture into the realm of the information age. But as a hedge against asymmetric threats, particularly nuclear-biological-chemical weapons in rogue adversary arsenals, TOIW could serve to be an extremely effective tool to not only deter but also asymmetrically counter such an attack. As a non-lethal weapon, it will allow us to further capitalize on the concept of targeting for effect while continuing to limit casualties, and enhance the ability of our forces to conduct operations to directly achieve desired effects.²⁵¹

One undeniable change in the world environment is that information systems now rapidly transmit and share information, creating an era of international culture, awareness, and globalized transparency. The 21st Century has been often described as the “Era of International Culture” and “The Information Age.” The global military agenda is more oriented towards cohesion, control and restraint. Additionally many more tools are available to execute our National Military Strategy. Incredible advances in technology are not just Revolutions in Military Affairs, but also

²⁴⁸ Denny, Douglas, Cmdr, USN, J-39 “Information Operations: The Legality of Cyber Attack and International Effects”, draft paper for possible submission, 10 Mar 99, page 5

²⁴⁹ Ibid, page 10

²⁵⁰ Ibid

²⁵¹ Deptula, David, Brig Gen , USAF, “Firing for Effect: Change in the Nature of Warfare”, Aug 95

are forcing complete paradigm shifts in the way we conduct war.²⁵² As such, the ways to influence and coerce an opponent to bend to a nation's will have greatly expanded beyond the classic, current paradigms. What we must often combat is the "arrogance of our own traditional thinking" in terms of the conduct of war.²⁵³

CONCLUSION

Although future MTWs may characteristically differ from each other, there is justifiable merit to approach any of these conflicts employing the concept of swift enemy defeat. Effects based warfare, along with parallel warfare, offer supporting methodologies to rapidly and decisively crush any adversary. Aside from different words, common perspectives definitely exist among Joint and Service Visions in this regard. Most important is to recognize the requirements for critical enabling capabilities, which will ensure the joint force can effectively accomplish NCA objectives to fight and win wars with minimal risk.

²⁵² Deptula, David, Brig Gen , USAF, "Firing for Effect: Change in the Nature of Warfare", Aug 95

²⁵³ Wright, Bruce, Brig Gen, Former Director of Joint Information Operations, Joint Staff, Pentagon. Interview with the author, 28 Sep 99

CONCLUSION

*“There is nothing more difficult to carry out
nor more doubtful of success,
nor more dangerous to handle
than to initiate the new order of things.”*

Machiavelli

The purpose of this work has been to offer insight into paradigms, visions, and the character of future MTW to mark the path towards better understanding of how to fight and win. Enriched by this knowledge, and inspired by further thought and debate, it is hoped we will be adequately prepared for the challenging task of defining our Nation's military strategy and force structure for the next Quadrennial Defense Review. As we roll up our sleeves and work at deciding what are certain to be hard choices, let us never forget that our ultimate objective, above all else, is to shape our military forces to be capable of protecting our cherished freedoms, deterring violent aggression, and winning our Nation's wars.

War Winning!

About the Author

Colonel (SEL) Philip M. Ruhlman attended the United States Air Force Academy, graduating in 1980. His professional military education includes Squadron Officer's School in 1986, Air Command and Staff College in 1994, and the Armed Forces Staff College, also in 1994. He served as an Air Force Fellow on a National Defense Fellowship for QDR 2001 at the National Defense University, Washington D.C. from 1999 to 2000. His civilian advanced education includes a Master's Degree in Aeronautical Science, Summa Cum Laude, from Embry Riddle Aeronautical University in 1987.

Col Ruhlman earned his pilot wings at Reese Air Force Base in 1981. His first assignment was an O-2A Forward Air Controller and Battalion Air Liaison Officer at Howard Air Base, Panama. He then entered F-16A training at MacDill Air Force Base, Florida in 1985. After graduation, he was assigned as Squadron Plans Officer for the 306 FS "Gunners" and later 308 TFS "Emerald Knights" at Homestead Air Force Base, Florida. He converted to the F-16C in 1988 and was transferred to the 614 TFS "Lucky Devils" at Torrejon Air Base, Spain. While at Torrejon, he served as Flight Commander, Wing Weapons Officer, and Chief Wing Standards and Evaluation. In August 1990, he deployed with the "Lucky Devils" to Doha Air Base, Qatar, in support of Operation DESERT SHIELD/DESERT STORM. He flew 43 combat missions over Iraq and Kuwait during the Gulf War.

In June 1991, he arrived in the Valley of the Sun for his first tour at Luke Air Force Base, Arizona. Assigned to the 311 FS "Sidewinders", he served as Chief of Squadron Programming and later Executive Officer to the 58th Fighter Wing Commander. In 1993, he was assigned to a joint duty staff position at Air Langley Air Force Base, Virginia. He then returned to Luke in July 1996, and was selected as Operations Officer for the 62nd Fighter Squadron. He then commanded the 63rd Fighter Squadron from June 1997 to June 1999. Under his command, the 63rd Fighter Squadron received consecutive "Outstanding" ratings from 19th Air Force Standardization and Evaluation, and an "Outstanding" rating during the 1998 Headquarters Air Education and Training Command Operational Readiness Inspection.

He is married to the former Lina Leticia Loaiza of Colombia, South America. They have a young son, Alexander Philip.